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DIE ESTIMATION: SOME EXPERIMENTS WITH SIMULATED SAMPLES OF A COINAGE

STEWART LYON

Introduction

THE number of obverse or reverse dies used in a coinage is, of course, the sum of those which have been recorded from surviving coins and those which are as yet unrecorded. Estimating the latter by statistical methods can never be an exact science. If the surviving sample of the coinage is unbiased, a first approximation is that the proportion of the total coinage attributable to unrecorded obverse (or reverse) dies is the same as the proportion of the total sample that consists of coins which are the sole representatives of their particular dies. But normally we are more interested in the number of unrecorded dies than their relative output. Here a better clue is given by the relationship between the numbers of coins recorded from 'singleton' and 'doubleton' dies – namely, those dies known respectively from exactly one and exactly two recorded specimens.

Let us consider the admittedly unlikely event that all the dies used in the coinage were equally represented in the coin 'population' from which the surviving coins happen to be a statistically average sample of reasonable size. As will be shown below, theory suggests that in this case the ratio of unrecorded dies to singletons ought to be much the same as the recorded ratio of coins from singletons to coins from doubletons. So if among the surviving coins there were twice as many coins from singletons as from doubletons (in which case there would be four times as many singleton dies as doubleton dies), it could be assumed that there were twice as many unrecorded dies as singletons.

In practice it is not as easy as this. Two different sources of departure from such an idealised situation must be recognised. The first is the unavoidable variation that occurs between different random samples. It cannot be assumed that a particular sample is an average sample, nor is it possible to tell how far its composition may deviate from the average. Because of this, a single estimate of the number of unrecorded dies, based on the composition of our sample of surviving coins, may be very misleading. Instead, upper and lower limits, known statistically as 'confidence limits', need to be calculated, within which it can be said that the true figure lies with a stated degree of probability such as 95 per cent. It should not then be assumed that the true answer lies in any particular part of the range defined by these limits unless there is some other evidence (for example, mint records) which can be taken into account. Unfortunately, however, unless the number of coins examined is at least twice the number of dies recorded, the confidence limits will be so far apart as to yield little reliable information.

The second source of departure lies in the multitude of factors which, in practice, prevent every die from having had an equal chance of being represented in the surviving sample. Unequal die-output, incomplete mixing, distortion by unrepresentative hoards, distortion by withdrawal from circulation – these are among the hazards that beset the die-estimator. The main purpose of this paper is to illustrate the effect of such hazards and to discuss some ways of counteracting them. Inevitably some theoretical concepts are introduced and developed, but the conclusions are essentially practical.

Acknowledgements: I am grateful to Martin Allen for persuading me to write this paper, and to my former colleague Alan Martin for having carried out the simulations on which

it is based. Dr Ian Stewart kindly read a draft and made helpful comments on its intelligibility.

The theoretical 'coverage' of a sample

In 1953, in a biological context, I. J. Good demonstrated that, if a random sample of N individuals is taken from a large population containing an unknown number of species in unknown quantities, the proportion p_0 of the population which is statistically 'expected' to consist of species not represented in the sample is approximately s_1/N where s_1 is the number of species represented in the sample once only. More generally, the proportion p_r of the population which is 'expected' to consist of the s_r species each represented in the sample by exactly r specimens is approximately $(r+1) s_{r+1}/N$, where s_{r+1} is the number of species each represented by exactly $r+1$ specimens.¹ It follows that an estimate of what Warren W. Esty has described as the 'coverage' of a sample,² in other words the proportion of the population which is made up of the species represented in the sample, is

$$c^{\text{est}} = 1 - p_0 = 1 - s_1/N.$$

This estimator of Good's was first introduced to numismatics in 1970, with species replaced by dies.³

The larger the numbers involved the better the approximation for a population proportion is likely to be, because the variability of the composition of actual samples from the 'expected' or average composition will be less. Esty has developed Good's analysis to produce a robust formula for the 95 per cent confidence limits of c , in other words the range within which, with 95 per cent probability, the true value of c will lie if the sample is random.⁴

Now it is obvious that, if c denotes the coverage of the sample, $(1 - c)$ represents its 'lack of coverage' – in other words the proportion of the population made up of species not present in the sample. We can therefore use Esty's confidence limits for c to obtain the corresponding limits for $(1 - c)$. In a numismatic context this gives us a method of calculating limits for the proportion of a coinage which was struck from dies so far unrecorded; but it is of limited use unless we can somehow derive from it an indication of how numerous those dies are.

Good's paper itself is not particularly concerned with the lack of coverage of a sample; instead, much of it is taken up with a mathematical exposition of methods of smoothing the actual values of s_1, s_2 etc. so they can be used to produce better estimates of the population proportions of the various species actually represented. To the extent that such smoothing might also lead to better estimates of the lack of coverage, the methodology could have numismatic applications, but it involves putting forward some hypothesis about the way in which the various species are distributed in the population. In any case the treatment is too mathematical for discussion here.

Simulating the repeated sampling of a coinage

In numismatic applications of the basic theory we equate dies with species, but we can seldom say that the material we are examining is a truly random sample of the total relevant coinage. It may be contaminated by runs of die-duplicates which found their way into a hoard; distorted by better recording of coins from rare mints than common ones; or biased by hoards which, if taken early in the coinage, lack late coins or, if assembled at the

¹ I.J. Good, 'The population frequencies of species and the estimation of population parameters', *Biometrika* 40 (1953), 237–64.

² Warren W. Esty, 'Estimation of the size of a coinage: a survey and comparison of methods', *NC* 1986, 185–215. This

is a fundamental review of the subject, but very condensed.

³ Stewart Lyon, 'Analysis of the Material', in H.R. Mossop, *The Lincoln Mint c.890–1279* (Newcastle-upon-Tyne, 1970) at pp. 16 and 19.

⁴ Esty, p. 208. See p. 6 below.

end of the coinage, underrepresent early coins compared with late ones. It may be that methods similar to those developed by Good could be used to adjust the observed die frequencies in the surviving material from a particular coinage to correct for a suspected form of distortion or bias, but it is beyond the scope of this paper to explore them. On the other hand it is important to negate the effect of obvious runs of die-duplicates, for if we include them in our calculations we shall increase the probability of underestimating the significance of unknown dies.

Even so, two things must be remembered. First, as has already been pointed out, we cannot tell how closely the actual sample on which we must base our estimates resembles the average for random samples of the same size from the same population. Secondly, the coverage approach leads to an estimate of the unrepresented proportion of the sampled coinage and not the number of unrecorded dies, unless it can be assumed that all the dies were equally represented in that population. Some years ago I thought it would be worth examining the magnitude of the errors of estimation that can be introduced by assuming that the sample has a statistically average composition when it does not, and that all the dies used were equally represented in the population when they were not. A colleague, Mr Alan Martin, used a computer to simulate the random drawing of 100 different samples of a particular size from a large population of such a coinage struck from exactly 100 obverse (or reverse) dies. The simulation was repeated for other sizes of sample and for different assumptions about the distribution of dies in the population.⁵

Nine of the experiments are summarised here. Samples of 50, 100 and 200 coins were drawn from three different populations:-

- * Population (A) contained 20,000 coins from each die.
- * Population (B) contained an average of 20,000 coins per die, the individual representation being distributed Normally with a standard deviation of 6,000. This means that about half the dies would each have been represented in the population by between 16,000 and 24,000 coins, and no more than five of the hundred dies would have been represented by fewer than 8,000 or more than 32,000 coins.
- * Population (C) consisted of the survivors of an equal output of 20,000 coins per die, where those survivors amounted to $20,000/1.025^{100-r}$ coins in the case of the r th die of the series of 100 dies. This corresponds to severe erosion by progressive withdrawal from circulation, for Population (C) includes only 1,735 coins from the first die to be used and 5,818 from the fiftieth, but has the full 20,000 which were struck from the hundredth die.

The ranges of die-frequencies in the 100 samples of each experiment are given in table 1. It can be shown that the averages and standard deviations for the three experiments involving Population (A) agree closely enough with those expected on the basis of the 'Poisson' distribution, which is the relevant theoretical model in that case. The experiments involving Population (B) give very similar results, showing that a statistically 'Normal' variation in die-output needs to have a fairly extreme standard deviation to have any marked effect on the frequency distribution. However, the heavily eroded Population (C) produces more elongated distributions and, on average, markedly fewer dies for the same size of sample. A similar effect, but with larger figures at some high frequencies, would be observed in a sample of a population containing a heavy concentration of coins struck from a very few of the dies used.

⁵ Esry, table 1 and appendix 5, analyses the results of applying various estimation formulae to a wider series of simulated samples.

Looking first at the total number of dies found in a sample (the line designated 'All' [die-frequencies]), it will be seen that the width of the range varies little from population to population for a given size of sample. This is not surprising, for the range is merely a reflection of the variability associated with random sampling. However, the figures for the limits of the range diminish as we move from Population (A) to Population (C). The explanation lies in the overrepresentation of late dies and the underrepresentation of early ones in Population (C). There are more unrecorded dies in this case, but they constitute a relatively smaller proportion of the eroded population from which the samples were drawn. That is not much comfort, for we really want to use whatever sample we have as a means of estimating the number of unrecorded dies, not their significance in terms of relative volume in an eroded population.

Some estimation formulae and their effectiveness

Earlier in this paper (and now changing the notation to make it more suited to dies and coins) it was indicated on the basis of Good's work that the expected proportion p_0 of the sampled population which consisted of unrepresented dies would be approximately d_1/N , where N is the number of coins in the sample and d_1 is the number of singleton dies. It will be seen from each of the experiments summarised in table I how widely the value of d_1 can vary between similar samples, so caution must obviously be exercised in drawing conclusions about the unrepresented proportion of the population, let alone the results obtained by equating that estimated proportion to the missing proportion of dies used.

If we again denote the estimated coverage of the sample (in other words the proportion of the sampled coinage which consists of coins from the dies represented in the sample) by c^{est} , we have

$$c^{est} = 1 - p_0 = 1 - d_1/N.$$

When, unusually, it is reasonable to assume that coins from each unrepresented die were on average as numerous in the sampled population as coins from each represented die, we can say that

$$D^{est} = d/c^{est}$$

where D^{est} is the total number of dies estimated to be present in the population and d is the number represented in the sample for all frequencies. Substituting $(1 - d_1/N)$ for c^{est} gives

$$D^{est} = d/(1 - d_1/N)$$

which can also be expressed as

$$D^{est} = d + d_1 \cdot d/(N - d_1) \text{ ————— Formula (1)}$$

where the second term $d_1 \cdot d/(N - d_1)$ is, of course, an estimate of the unrecorded dies d_0 , since $D = d + d_0$.

It will be obvious that if N , the size of the sample, is inflated by the presence of blocks of die-duplicates, this estimate of d_0 will be depressed and D will tend to be underestimated. We can expect a similar effect if we suspect that coins from each unrepresented die were on average considerably less numerous in the sampled population than coins from each represented die (either because we have reason to believe there was far from equal output from each die used, or because it is obvious from a die-study that identifiable sub-groups of

the coinage are substantially under- or over-represented in the sample). The consequence of such a situation is likely to be a higher ratio of non-singletons to singletons, and it will be apparent from Formula (1) that this will also depress the estimate of d_0 . There is therefore much to be said for finding an estimator that does not incorporate the value of N but is based only on the numbers of dies that are represented in small quantities, given that we want to estimate the number represented by the smallest quantity of all, namely zero.

One way of doing this is to go back to Good's generalised statement. Redefined in terms of dies and number of coins in the sample, this says that in a random sample of size N taken at random from a coinage struck from D obverse (or reverse) dies, the proportion p_r of the coinage which is 'expected' to be made up of coins struck from dies represented exactly r times in the sample is approximately

$$p_r = (r+1) d_{r+1}/N$$

where d_{r+1} is the number of dies represented by exactly $r+1$ specimens.

It follows that

$$\begin{aligned} p_0 &\approx d_1/N \text{ (as we have seen before)} \\ \text{and } p_1 &\approx 2d_2/N \\ \text{and } p_2 &\approx 3d_3/N. \\ \text{Thus } p_1 + p_2 &\approx (2d_2 + 3d_3)/N \end{aligned}$$

and therefore, by division,

$$\begin{aligned} p_0/p_1 &\approx d_1/2d_2 \text{ ————— (i)} \\ \text{and } p_0/(p_1 + p_2) &\approx d_1/(2d_2 + 3d_3) \text{ ————— (ii)} \end{aligned}$$

Now if d_1 is small relative to d we may think it not unreasonable to assume that coins from each unrepresented die were on average present in the sampled population in similar numbers to the coins from each die represented, in case (i), by no more than two specimens, or in case (ii) by no more than three specimens. If so, we arrive at the following further approximations:-

$$d_0/d_1 \approx d_1/2d_2 \text{ ————— (i*)}$$

(which is the comparison of ratios mentioned in the introduction to this paper)

$$\text{and } d_0/(d_1 + d_2) \approx d_1/(2d_2 + 3d_3) \text{ ————— (ii*)}$$

from which, because $D = d + d_0$ by definition, two alternative estimating formulae for D can be deduced:-

$$D^{est} = d + d_1 \cdot d_1/2d_2 \text{ ————— Formula (2)}$$

$$\text{and } D^{est} = d + d_1 \cdot (d_1 + d_2)/(2d_2 + 3d_3) \text{ — Formula (3)}$$

It is evident that a feature common to Formulae (1), (2) and (3) is the provision of a multiplier for d_1 to produce an estimate of d_0 . This estimate, when added to the total known dies d , results in an estimate of D . All three formulae are therefore sensitive to the degree of sampling error contained in the actual value of d_1 . As has already been

remarked, the scope for practical variation in d_1 is very wide. The samples in the nine experiments have therefore been used to calculate estimates of D from each of the three formulae developed above. The ranges obtained are illustrated in table 2 by ranking the 100 estimates from each formula in order of magnitude and showing the values that emerge at particular points in the ranking order. Thus half the estimates lie between rank 26 and rank 75, with the median estimate being at rank 50 (or 51). All but 10 per cent of the estimates lie between rank 6 and rank 95.

It can readily be seen that, even with an equal presence of each die in the sampled population, single estimates of the total number of dies are likely to be very unreliable unless the size of the sample is at least twice the number of dies represented in it; that is to say, the confidence limits of such an estimate are very widely separated.⁶ With a population distorted by erosion or otherwise biased there is also the problem of a bias towards underestimation; this is noticeably reduced (as can be clearly seen in the case of a sample of 200) if Formula (2) or Formula (3) is used instead of Formula (1). Since Formula (3), although less powerful than Formula (2) in compensating for bias, demonstrates a confidence interval not much wider than Formula (1), it is generally to be preferred.

Esty's approach to unequal die-representation

Esty puts forward a quite different approach to the problem of unequal die-representation in the population sampled. Instead of eliminating N , he starts with the estimated coverage c^{est} of the sample, obtained by the formula

$$c^{est} = (1 - d_1/N)$$

(or a slight modification of it), and converts it into an estimate of the total number of dies D by assuming that the die-representation is distributed 'negative-binomially'.⁷ This gives the expression

$$D^{est} = (d/c) + N(1 - c)/tc$$

where c is an abbreviation for c^{est} . Substituting for c and rearranging the formula, we obtain

$$D^{est} = d + d_1 \cdot (d + N/t)/(N - d_1) \text{ ——— Formula (4)}$$

where t is a constant chosen to describe the shape of the distribution. Formula (4) provides yet another multiplier for d_1 to estimate d_0 . By comparing this formula with Formula (1) it can be seen that the estimate of d_0 given by Formula (4) is equivalent to multiplying by a factor $(1 + N/t)$ the corresponding estimate produced by Formula (1).

It is obvious that the size of this multiplier is critically dependent on the choice of the shape constant t . Esty suggests that a useful assumption in the absence of other information is that $t = 2$, because this allows for some dies being represented in the sampled population by relatively few coins and some by several times the average number.⁸ As can be seen from table 2, the use of Formula (4) with this value of t compensates well for the erosion present in Population (C), but with the other two populations it produces a serious bias towards overestimating the total number of dies used. This is because, where an

⁶ See pp. 10–12 below.

⁷ Esty, p. 209.

⁸ Esty, pp. 195–6.

assumption of equal die representation in the population is not far from the truth, the constant t needs to be much larger than 2 so that the size of the adjustment to Formula (1) is small. What is therefore needed if Esty's approach is to be of practical application is some means of using the evidence of the sample, together with such other information about the coinage as may be available, to produce a reasonable assumption about t . At present this is lacking.

Confidence limits

Where Formula (3) is appropriate, confidence limits for the total number of dies D at approximately the 95 per cent level can be obtained by first calculating 95 per cent confidence limits (c^{max} , c^{min}) for the coverage of the sample using an expression equivalent to that given by Esty,⁹ namely

$$\left. \begin{array}{l} c^{max} - c^{est} \\ \text{and} \\ c^{est} - c^{min} \end{array} \right\} = (2/N) \cdot [d_1 + 2d_2 - (d_1)^2/N]^{\frac{1}{2}} \text{ --- Formula (5)}$$

where $c^{est} = (1 - d_1/N)$. The value obtained for D^{est} using Formula (3) is then multiplied by c^{est}/c^{max} and c^{est}/c^{min} to give respectively the lower and upper confidence limits for D , which may be denoted by D^{min} and D^{max} . These limits are only statistically valid if the sample is random and is taken from a coin population which, although it may have been contaminated by some large blocks of die-duplicates, does not seriously under-represent significant numbers of the dies used in the coinage, for example through the serious erosion of early issues, the low presence of late issues, the existence of regional bias, or extreme variations in die-output.

To illustrate the method, the appendix contains worked examples based on three sizes of samples of Population (B) with, in each case, die frequencies close to the average of the 100 simulated experiments. The theoretical confidence limits derived from each sample encompass more than 90 per cent of the simulated estimates shown in the relevant column of table 2 and are probably not far from encompassing 95 per cent of them. The use of coverage confidence limits to obtain confidence limits for the number of dies is therefore seen to be justified in the circumstances of this case.

A second set of examples involves Population (C). It is obvious from table 2 that confidence limits based on an estimate of D derived from Formula (3) would be fallacious, because the validity conditions are not satisfied. In this case we have reason to believe that Formula (4) with $t = 2$ would be more appropriate for estimating D . However, the confidence limits obtained as described above encompass fewer than 90 per cent of the simulated estimates. These limits must be significantly widened to cover 95 per cent, and a different methodology is needed.

Die-ratios

The same sample of a coinage will inevitably have to be used to estimate both the unrecorded reverse and the unrecorded obverse dies, so the two estimates will not be independent of one another. It would therefore seem appropriate to calculate maximum and minimum values for the ratio of obverse to reverse dies used in the coinage by dividing the upper confidence limit for the total number of obverse dies by the upper confidence

⁹ Esty, p. 208.

limit for the total number of reverse dies, and similarly the lower confidence limits. It would not be consistent with the lack of independence to divide the upper confidence limit for obverse dies by the lower confidence limit for reverse dies, or *vice versa*. However, no theoretical or experimental investigation of the subject has been attempted.

Conclusion

The uncertainties involved in statistical die-estimation are such that it must be used with discretion by the numismatist. He must first understand the material he is handling, and try to gauge in what respects it is or may be a biased representation of the total coinage. The greater the perceived bias, the less he can afford to rely on the results of a mechanistic estimation. And he must never forget the variability caused by the very process of sampling.

Four examples of estimation formulae for the total number of dies have been discussed:-

- Formula (1): $D^{est} = d + d_1 \cdot d/(N - d_1)$
 Formula (2): $D^{est} = d + d_1 \cdot d_1/2d_2$
 Formula (3): $D^{est} = d + d_1 \cdot (d_1 + d_2)/(2d_2 + 3d_3)$
 Formula (4): $D^{est} = d + d_1 \cdot (d + N/t)/(N - d_1)$

where

- D^{est} is a central estimate of the total number of obverse (or reverse) dies used in the coinage;
 d is the total number of obverse (or reverse) dies recorded;
 N is the total number of coins included in the die-analysis;
 d_1 is the number of dies from which only one specimen is recorded;
 d_2 is the number of dies from which exactly two specimens are recorded;
 d_3 is the number of dies from which exactly three specimens are recorded;
 t is an arbitrary constant, whose suggested value is 2.

Formula (1) is satisfactory where there is reason to believe that every die had a roughly equal chance of being included in the surviving sample. Formulae (2) and (3) are better where, although the sample may be contaminated by the obvious over-representation of some of the dies, there is no evidence that identifiable parts of the coinage are seriously under-represented. Formula (4) tries to compensate for wide variations in die-representation in the sampled population by adopting Esty's assumption that the dies would have had a 'negative-binomial' distribution; this has the effect of multiplying by a factor $(1 + N/d)$ the central estimate of the number of unrecorded dies obtained from Formula (1). My own view is that, unless there is clear evidence that the sample has been taken from a coin population which is seriously unrepresentative of the totality of the issue for reasons other than the inclusion of blocks of die-duplicates, it is preferable to avoid the use of a subjective correction such as Esty's. Formulae (2) and (3) are based on an alternative approach of eliminating N , the sample size, from the estimation formula. The presence of N in the denominator of Formula (1) depresses the estimate of unrecorded dies if, for example, the sample includes runs of die-duplicates from hoards. Formulae (2) and (3) base the central estimate on the numbers of dies represented in small quantities in the sample, taking no account of dies that are heavily represented. Because it makes use of more of the data and therefore narrows the confidence limits, Formula (3) is more efficient than Formula (2).

Where Formula (3) is considered suitable, confidence limits at approximately the 95 per cent level can be calculated as described in a previous section of the paper and exemplified in the appendix. However, the confidence will be misplaced if there are unrecorded dies

which were also unrepresented – or virtually so – in the population from which the surviving sample has come down to us. No estimation formula can hope to detect such dies.

Finally, limits of estimates of die-ratios should be based on ratios of obverse and reverse upper confidence limits and lower confidence limits respectively, and not by taking ratios of the upper limit of one and the lower limit of the other.

TABLE 1

Variations in die-frequencies found in nine experiments, each of 100 simulated random samples of one of three populations (A), (B) and (C)

<i>No. of specimens per die</i>	<i>Range of frequencies (and average frequency)</i>		
	<i>Population (A)</i>	<i>Population (B)</i>	<i>Population (C)</i>
<i>Sample size 50</i>			
1	21–42 (30.9)	19–42 (29.9)	14–35 (25.7)
2	3–12 (7.3)	2–14 (7.5)	3–15 (7.8)
3	0– 4 (1.3)	0– 4 (1.4)	0– 5 (2.1)
4	0– 2 (0.2)	0– 2 (0.2)	0– 3 (0.4)
5		0– 1 (0.0)	0– 1 (0.1)
6			0– 1 (0.1)
All	34–46 (39.6) (<i>S.D.</i> 2.5)	34–46 (39.0) (<i>S.D.</i> 2.4)	30–42 (36.2) (<i>S.D.</i> 2.5)
<i>Sample size 100</i>			
1	26–49 (37.6)	24–49 (35.8)	19–42 (29.9)
2	7–25 (17.6)	9–27 (17.8)	8–22 (14.5)
3	1–13 (6.6)	3–12 (6.6)	2–12 (6.8)
4	0– 4 (1.3)	0– 5 (1.6)	0– 8 (3.0)
5	0– 2 (0.3)	0– 2 (0.4)	0– 3 (1.0)
6	0– 1 (0.1)	0– 1 (0.1)	0– 2 (0.3)
7	0– 1 (0.0)		0– 2 (0.1)
8			0– 1 (0.1)
All	56–71 (63.6) (<i>S.D.</i> 3.2)	56–70 (62.2) (<i>S.D.</i> 2.9)	48–63 (55.8) (<i>S.D.</i> 3.2)
<i>Sample size 200</i>			
1	13–38 (27.3)	11–34 (26.9)	16–35 (25.2)
2	17–38 (27.1)	16–39 (24.8)	10–30 (18.1)
3	11–26 (18.3)	9–26 (17.4)	5–22 (12.1)
4	2–17 (9.2)	3–19 (9.3)	3–15 (8.4)
5	0– 8 (3.6)	0– 9 (4.2)	1– 9 (5.3)
6	0– 3 (1.0)	0– 7 (1.3)	0– 7 (2.9)
7	0– 2 (0.3)	0– 3 (0.5)	0– 5 (1.6)
8	0– 1 (0.1)	0– 2 (0.2)	0– 4 (0.9)
9	0– 1 (0.0)	0– 1 (0.0)	0– 3 (0.4)
10		– (–)	0– 2 (0.2)
11		0– 1 (0.0)	0– 1 (0.0)
12			0– 1 (0.0)
All	76–93 (86.9) (<i>S.D.</i> 2.9)	77–90 (84.6) (<i>S.D.</i> 2.9)	67–82 (75.2) (<i>S.D.</i> 3.3)

Note S.D. is the standard deviation of the samples.

TABLE 2

Ranked estimates of the total number of dies (true number = 100) obtained by applying four estimation formulae to each of the 100 simulated random samples in each of the nine experiments. (1 = highest estimate, 100 = lowest, 50 = median, 26 and 75 = quartiles, etc.)

Ranking of sample result for given formula	Estimated total number of dies used											
	Population (A)				Population (B)				Population (C)			
	F(1)	F(2)	F(3)	F(4)	F(1)	F(2)	F(3)	F(4)	F(1)	F(2)	F(3)	F(4)
<i>Sample size 50</i>												
1	288	284	288	419	288	365	288	419	140	210	138	198
6	179	233	173	258	165	204	178	237	118	149	124	166
11	154	180	154	218	140	164	145	198	103	128	105	143
26	125	135	124	178	114	125	119	158	88	102	91	123
50	105	103	104	146	97	98	95	135	74	75	75	99
75	86	85	84	118	80	84	79	110	63	65	64	84
90	75	74	75	102	72	74	73	97	57	57	56	75
95	69	71	70	92	69	65	69	92	53	53	53	69
100	59	56	56	77	55	47	54	70	43	38	42	53
Average	111	117	111	156	104	113	105	144	78	87	79	106
Std. dev.	38	47	37	56	35	54	36	52	20	32	21	29
<i>Sample size 100</i>												
1	139	170	139	187	137	179	139	185	107	172	122	143
6	128	147	132	173	117	134	117	153	102	118	108	135
11	121	136	125	161	112	121	109	147	92	111	103	119
26	112	120	114	147	103	107	104	135	85	98	88	109
50	102	103	101	131	97	97	97	125	79	87	83	100
75	92	91	91	118	90	91	91	114	74	77	76	92
90	88	85	87	112	84	83	85	106	69	73	70	86
95	86	81	83	107	82	79	83	102	65	68	66	80
100	77	74	74	95	74	70	71	89	60	60	63	72
Average	103	107	103	134	98	101	98	126	80	90	84	102
Std. dev.	14	21	15	21	11	18	12	16	10	18	13	15
<i>Sample size 200</i>												
1	115	124	118	138	107	118	112	128	98	125	108	119
6	109	114	109	129	105	112	106	124	95	108	103	112
11	108	112	108	127	103	110	105	122	93	105	100	110
26	104	105	105	121	101	106	103	119	89	99	94	105
50	101	101	100	116	99	101	99	115	86	93	90	101
75	98	97	98	112	94	95	95	109	83	88	87	96
90	94	94	94	108	92	91	92	104	80	84	83	92
95	93	90	92	103	90	89	89	101	78	82	81	89
100	81	79	81	88	84	81	82	89	74	74	76	83
Average	101	102	101	117	98	101	99	113	86	94	91	101
Std. dev.	5	7	6	8	5	8	6	7	5	9	6	7

APPENDIX

*Worked Examples of Confidence Limits**Example 1*

Approximate average values of d_1 , d_2 and d in each of the experiments in table 1 involving Population (B) are used here to obtain, from Formula (5), 95 per cent confidence limits for the coverage of a sample which discloses those values. A central estimate D^{est} for the total number of dies used (the true value of which is, of

course, 100) is obtained from Formula (3), and the coverage confidence limits are applied to it to see whether valid confidence limits D^{max} and D^{min} can be obtained in this way:-

Item	Sample 50	Sample 100	Sample 200
1. Confidence limits for the sample's coverage (c)			
(i) d_1	30	36	27
(ii) d_2	8	18	25
(iii) $c^{est} = (1 - d_1/N)$	.400	.640	.865
(iv) $2/N$	.040	.020	.010
(v) $d_1 + 2d_2$	46	72	77
(vi) $(d_1)^2/N$	18.00	12.96	3.64
(vii) $[(v) - (vi)]^2$	5.29	7.68	8.57
(viii) $(iv) \times (vii)$	.212	.154	.086
(ix) $c^{min-max} =$ (iii) -/+ (viii)	.188, .612	.486, .794	.779, .951
2. Conversion to confidence limits for total dies (D)			
(x) d	39	62	85
(xi) d_3	1	7	17
(xii) $d_1, (d_1 + d_2)/$ $(2d_2 + 3d_3)$	60	34	14
(xiii) $D^{est} = (x) + (xii)$	99	96	99
(xiv) $D^{max-min} = (xiii)$ $\times (iii)/(ix)$	211, 65	126, 77	110, 90

In the conversion, line (xii) derives an estimate of d_0 from Formula (3). This is added to the known dies d to give the central estimate D^{est} and hence – in line (xiv) – values of D^{max} and D^{min} .

Comparison of line (xiv) with the F(3) column for Population (B) in table 2 shows that, for each size of sample, the values of D^{max} and D^{min} cover well over 90 per cent of the experimental results – i.e. they are respectively above and below rankings 6 and 95 in that column. This suggests that Esty's formula for the 95 per cent confidence limits of the coverage of a sample can also be used to determine approximate 95 per cent confidence limits for the number of dies used in the coinage if the sample is such that it is reasonable to apply Formula (3) to it.

Example 2

This differs from Example 1 in that Population (C) replaces Population (B), and Formula (4) replaces Formula (3):-

Item	Sample 50	Sample 100	Sample 200
1. Confidence limits for the sample's coverage (c)			
(i) d_1	26	30	25
(ii) d_2	8	14	7
(iii) $c^{est} = (1 - d_1/N)$	.480	.700	.875
(iv) $2/N$	.040	.020	.010
(v) $d_1 + 2d_2$	42	58	39
(vi) $(d_1)^2/N$	13.52	9.00	3.12
(vii) $[(v) - (vi)]^2$	5.34	7.00	5.99
(viii) $(iv) \times (vii)$	.214	.140	.060
(ix) $c^{min-max} =$ (iii) -/+ (viii)	.266, .694	.560, .840	.815, .935

2. Conversion to confidence limits for total dies (D)

(x)	d	36	56	75
(xi)	$d_1 = d/(N - d_1)$	39.00	24.00	10.71
(xii)	$(xi) \times (1 + N/2d)$	66	45	25
(xiii)	$D^{est} = (x) + (xii)$	102	101	100
(xiv)	$D^{max/min} = (xiii) \times (iii)/(ix)$	184, 71	126, 84	107, 94

In the conversion, line (xi) derives an estimate of d_0 from Formula (1) and line (xii) modifies it by applying the Esty adjustment factor with $t = 2$, to produce an estimate of d_0 corresponding to Formula (4). This is added to the known dies d to give the central estimate D^{est} and hence – in line (xiv) – values of D^{max} and D^{min} .

However, comparison of line (xiv) with the F(4) column for Population (C) in Table 2 shows that only in the case of a sample size of 50 do the values of D^{max} and D^{min} cover as much as 90 per cent of the experimental results – i.e. the relevant range between rankings 6 and 95 in that column. This means that Esty's formula for the 95 per cent confidence limits of the coverage of a sample cannot be used to determine 95 per cent confidence limits for the number of dies used in the coinage if the sample is such that Formula (4) has to be applied to it.

THE ASHDON (ESSEX) HOARD AND THE CURRENCY OF THE SOUTHERN DANELAW IN THE LATE NINTH CENTURY

M. A. S. BLACKBURN

In a woodland in the parish of Ashdon in north Essex, Mr Bob Spall was about to return to felling further diseased elm trees after his lunch when he took out his metal detector for a few minutes and to his surprise found in the surface mud fragments of three Viking silver coins. Between then, 20 March 1984, and 4 October 1984 he returned with his wife Barbara on sixteen occasions and painstakingly recovered twelve intact coins and 102 fragments, the remains of some 65–70 pennies of the late ninth century.¹

The hoard,² which was deposited c.890–5, is only the fifth that we know of from the last two decades of Alfred's reign (871–99); the other four were of quite different compositions as well as being rather incompletely recorded. It sheds new light on the earliest phase of Anglo-Viking coinage and shows how this had come to dominate the currency of the southern Danelaw even before the introduction of the St Edmund Memorial issue. It also provides the first known coin of King Guthfrith of York (c.883–95).

Recovery and condition of the coins

The woodland in which the coins were discovered is one known as 'Home Wood' on the medieval manor of 'Waltons'. It is within the parish of Ashdon, but actually nearer to the hamlet of Steventon End³ than the village of Ashdon itself. The hoard was found just to the north side of the trackway that runs through the wood (NGR TL59524357), and the findspot is a mere 150 yards from the Essex-Cambridgeshire border.

The coins were dispersed through the top soil over an area of approximately 10 feet by 12 feet (3.0m by 3.7m), and from the surface down to a depth of 18 inches (0.45m). The acidity of this highly organic soil had reacted with the silver leaving it extremely brittle and liable to crumble. This was especially pronounced in the coins which came from near the base of a large hornbeam tree, rapidly turning purple when first exposed to the air and then black on contact with water. Most of the coins had been broken and dispersed by some prior disturbance of the ground, perhaps the grubbing up and replanting of trees, for it appears to be an old mixed deciduous wood that has been intensively managed and coppiced. Some of the trees are evidently several hundred years old. A few of the

Acknowledgements. I am grateful to Mr and Mrs Bob Spall for their kind consideration and assistance during the recovery of the hoard. Michael Bonser was also a considerable help at this stage. Miss Marion Archibald kindly invited me to prepare the find for the coroner's inquest and subsequently for publication. Paul Bibire (Dept. of Anglo-Saxon, Norse and Celtic, Cambridge) has advised me on the name forms appearing on the coins. Keith Howes (British Museum) and Miss Julie Dawson (Fitzwilliam Museum) have conserved the coins. Bryon Bache (Dept. of Applied Biology, Cambridge) and Peter Northover (Dept. of Metallurgy and Science of Materials, Oxford) have provided the analytical appendices. Helpful comments on an earlier draft of this paper were received from Philip Grierson, Simon Keynes, Michael Metcalf and Ian Stewart. I am grateful to them all.

¹ The hoard was declared 'Treasure Trove' at an inquest held at Saffron Walden on 8 January 1985. Subsequently four coins were acquired by the British Museum, two by Saffron Walden Museum, and the remainder by the Fitzwilliam Museum, as detailed in the catalogue below.

² For a preliminary report see M. A. S. Blackburn, 'A preliminary account of the 9th-century coins in the Ashdon (Steventon End) hoard 1984', *NCire* 1985, 43–4; and for a popular account of the discovery see M. Bonser and B. Spall, 'A day to remember: The finding of a Viking hoard', *Treasure Hunting*, April 1985, 14–18.

³ Spelled on some maps Stevington End.

fragments broke further with handling, and these new breaks showed that the metal although silvery on the surface had been corroded to a white compound throughout.

On the discovery of the first three coins, Mr Spall had promptly informed Michael Bonser and me, and we were present on a number of occasions while he was searching the site. It was also visited by two archaeologists, Mr David Buckley of Essex County Council and Mr David Haigh of Cambridgeshire County Council, who confirmed our impression that there was no evidence of a container or any other archaeological context for the find. It was decided to leave the recovery of the coins to Mr Spall, who was exercising great skill and patience in the task. After running his metal detector over the exposed ground surface, he would remove a clod of soil with a trowel or fork and break it up on a clean surface before running his detector over it again. After digging out a wider area than that in which the coins were found, he went back and rechecked the spoil that he had removed using the same procedure, finding a small number of additional fragments. In this way he was able to recover pieces weighing as little as 0.05g, so small that when coated in soil they could hardly be discerned with the naked eye. There is no doubt that he was able to retrieve the hoard more effectively than would have been possible using conventional archaeological techniques, including sieving. Such was Mr Spall's dedication to the task that one small fragment found during his lunch break he carried all afternoon in his mouth until he could put it in a place of safety at home that evening. Since 1984 he has returned to search the site on several occasions but has made no further discoveries there.

Trying to match together the 102 fragments in order to reconstruct the broken coins has been as frustrating as doing a jigsaw puzzle from which two-thirds of the pieces have been lost. While many have been found to fit together to form larger groups, the majority of the coins are still very incomplete. It is likely that the missing portions of the many partial coins had simply disintegrated into small particles rather than been present in larger pieces but not recovered by Mr Spall. Table 1 shows the sizes of the reconstructed pieces, the number of items having been reduced from 114 (i.e. 12 intact coins and 102 fragments)⁴ as found to 71 listed in the catalogue. However, it is likely that a few of the smallest fragments do in fact belong to others in the hoard without our realising it, so that the total number of coins represented is probably nearer to 65. But the original deposit may well have been larger, for given that over a third of the surviving coins are only small fragments (Table 1) it is probable that there were more that have completely perished leaving no trace at all.

TABLE 1
The state of preservation of coins in the hoard

<i>Whole coins</i>	<i>More than two-thirds</i>	<i>Two-thirds to a quarter</i>	<i>Less than a quarter</i>	<i>TOTAL</i>
13	13	14	31 (c.25)	71 (c.65)

Hoards in such a poor state of preservation are rare, but the large Norwegian hoard from Slethei containing mainly English coins of Æthelred II was in a similar fragile and fragmentary state when discovered in 1866.⁵ Both hoards serve as a warning to archæo-

⁴ Some of the whole coins and fragments have broken further or become chipped with subsequent handling, and so these figures will not tally with those in the catalogue below.

⁵ C. L. Schive, 'Fortegnelse over Mynter fra Middelalderen, fundne i Aaret 1866 ved et Sted kaldet Hammeren paa Huusmandspladsen Sletheids Grund under Gaarden Thjore i Haalands Præstegjeld paa Jæderen'. *Forhandlinger i*

Videnskabs-Selskabet i Christiania 1869, 87-106. The find was acquired by the Historical Museum, Bergen, but many of the smaller fragments, which appear to be in a comparable condition to those in the Ashdon hoard, have since been deposited for study at the University Coin Cabinet, Oslo.

logists that in certain soil conditions even fine silver coins can decay leaving little or no trace, so that an apparent absence of single-finds in such a situation could be very misleading to those interpreting the history of the site. Although such soil conditions may be unusual, their effect on coin and metal artefacts deserves further investigation.⁶ Analyses of soil samples taken from the Ashdon hoard site suggest that the corrosion was caused by soluble organic acids passing through the soil (see Appendix 1).

Composition of the hoard

There are three basic elements in the hoard – Anglo-Saxon, Viking, and Carolingian – and it appears to have consisted entirely of pennies, for there is no trace of either round or cut halfpennies. A summary of the coins found is given in Table 2, from which it can be seen that among those that can be firmly attributed the Viking issues dominate and there are surprisingly few official Anglo-Saxon issues. Among the 32 uncertain pieces, mostly small fragments that cannot be identified, there may be a somewhat higher proportion of Anglo-Saxon coins, but overall they still constitute only a minor element in the hoard, as also do the Carolingian coins. The Anglo-Saxon element will be described first, with an account of the criteria used for distinguishing official coins from imitations. The Viking issues follow, divided into several categories according to whether they carry the name of a Viking ruler or that of Alfred, and whether the moneyer was one actually working in the Danelaw or one from Greater Wessex or Mercia whose name had been merely copied. Finally, the four Carolingian coins will be discussed. Three coins from the hoard have been analysed (see Appendix 2).

TABLE 2
Summary of the contents of the hoard

<i>Anglo-Saxon</i>		
Alfred, Two-line type		1
<i>Viking (all Two-line type)</i>		
Guthrum	5	
Guthfrith	1	
'Alfred', Danelaw moneyers	12	
'Alfred', Copying names of West Saxon or Mercian moneyers	9	
'Alfred', blundered or uncertain moneyers' names	7	34
<i>Uncertain Anglo-Saxon or Viking</i>		
(all Two-line type)		32
<i>Carolingian</i>		
Charles the Bald (or later)	3	
Odo	1	4
<i>Total</i>		71 (c.65 coins?)

⁶ The subject is discussed in several papers in *Coins and Archaeology*, edited by H. Clarke and E. Schia, BAR-S556 (Oxford, 1989).

a) *Anglo-Saxon element – Two-line coins of Alfred (871–99)*

The majority of coins in the hoard carry the name of Alfred and are of his Two-line type. However, most of these are thought to be not official coins but Viking imitations. The Two-line type was the principal issue of the third and final phase of Alfred's coinage. Dolley and Blunt, in their classic study of the reign, dated its introduction c.887, following immediately upon the London Monogram issue which they associated with the events of 886 when, as they thought, Alfred gained control of the city from the Vikings.⁷ It now appears that his authority in London was recognised well before that, and there are reasons for thinking that the London Monogram and Two-line issues began in the early 880s. The arguments will be developed elsewhere in connection with a study of the second phase of Alfred's coinage, but they rely in part on the attribution to London of Cross and Lozenge coins of Alfred and Ceolwulf II. The issue of this type seems to have ceased by c.880.⁸

The Two-line coinage was a very large one, struck in the names of some eighty moneyers and evidently produced at a number of different mints. Dolley and Blunt distinguished four main styles of die-cutting within the issue which they attributed to Canterbury, London ('early' and 'late' styles), and west Mercia, and they recognized the existence of a significant number of Viking imitations.⁹ Their study was only preliminary, however, and they did not attempt to provide detailed descriptions of the scope of these stylistic groups, of the moneyers represented in them, or of the division between official issues and Viking imitations. In order to assess the significance of this new hoard it has been necessary to make a detailed stylistic analysis of the Two-line type generally. A full account of this will appear in due course, but the results so far as they concern this report may be summarised as follows.

The identification of four major stylistic groups has been broadly confirmed. They are associated with London, Canterbury, Winchester (Dolley and Blunt's 'late London' style),¹⁰ and west Mercia. The London group comprises the work of eight moneyers including Tilewine, who is named on some London Monogram coins, and three other moneyers who also struck the London Cross and Lozenge coins referred to above. The Canterbury series is much larger, embracing nineteen moneyers, and it is identified through coins of the archbishops and the late variety with DORO(*vernica*) added to the obverse legend. The Winchester group contains seven moneyers some of whom continued into Edward the Elder's reign (899–924) using a style of die that can be traced ultimately to moneyers of the mint-signed coins of Athelstan (924–39). For each of these three series some sub-division between early and late styles can be made, although it is difficult to place absolute dates on them. The fourth group from west Mercia is rather different, for it embraces five distinct styles of die-cutting and may represent the work of several quite distant mints. The seven moneyers involved are each in some way linked with the distinctive west Mercian coinage of Edward the Elder, including his pictorial issues. In addition to these four main groups, there are also a number of minor styles associated with moneyers who may have been working at other centres in Greater Wessex or Mercia. Together these styles account for some 50 of the moneyers. The remaining 30 or so are thought to have been working at mints in the Danelaw (see below). Of course, in every case it is the source of the dies rather than the mint-place that we are identifying through their styles, and while the dies will often have been used by moneyers operating in the

⁷ R. H. M. Dolley and C. E. Blunt, 'The chronology of the coins of Ælfred the Great 871–99', *Anglo-Saxon Coins*, edited by R. H. M. Dolley (London, 1961), pp. 77–95, at 85.

⁸ M. A. S. Blackburn, 'The London mint in the reign of Alfred', *Kings, Currency, and Alliances*, edited by M. A. S. Blackburn and D. N. Dumville (Woodbridge, forthcoming).

⁹ Dolley and Blunt, pp. 84–6.

¹⁰ The Winchester identification was first suggested in C. S. S. Lyon, 'A significant "Winchester" die-link in the reign of Edward the Elder (899–924)', *NCirc* 1983, 261–2.

same town, some may have been sent for use at mints elsewhere. Where in this paper there is a reference to a London or Canterbury moneyer, etc., it should be understood as meaning a moneyer who uses London or Canterbury style dies.

The Viking imitations of Alfred's coins are not always easily distinguished. Their identification is based on three criteria: anomalous style, light weight, and poor literacy. If two of these characteristics are present one can be reasonably sure that the piece is imitative, but one should be wary of condemning a coin on grounds of style or weight or literacy alone unless it is an extreme case. The style of a coin is judged by the detailed form and arrangement of its lettering and decorative features, but these will vary to some extent even within an official style. It is only by assembling a fair number of specimens of full weight and good literacy that one can become familiar with the normal range of a die-cutter's work, and so distinguish this from imitative products. Even so the task can be difficult, for some of the Danelaw craftsmen tried to copy the style of lettering as well as the legends and did so tolerably well. Often one's opinion that the style is official or imitative is confirmed by the weight of the coin, but where with a fragment this check is not available and only a few letters are visible it may be impossible to decide what its status is. For this the reason many of the smaller fragments in the hoard have been placed in an uncertain category.

The difference in weight between the Anglo-Saxon and Viking issues arises because mints in the Danelaw did not adopt the higher weight standard that Alfred had introduced at the start of the third phase of his coinage. Official Two-line coins were struck to a standard of c.1.60g (24.5gr.) and they rarely fall below 1.45g (22.5gr.), whereas Viking issues were struck to a standard of around 1.35g (21.0gr.) or less and they rarely reach 1.45g (22.5gr.). This lighter standard can also be seen in the contemporary coins of Guthrum, and it continued to be used in the St Edmund Memorial issue, the regal Viking coinage of York, and the St Peter issue. As with style, the criterion is not absolute, for some official coins weight below 1.45g while the occasional Viking one will exceed it. With damaged coins one can sometimes guess at the original weight, but that will only be useful if it lies very clearly above or below the 1.45g mark. A similar clear margin will be required for coins, such as those in this hoard, that have been affected by corrosion and leaching.¹¹

The degree of literacy in the Viking issues varies greatly, for while the inscriptions on some are heavily blundered or quite meaningless, many are perfectly correct. Moreover errors do occasionally occur in the official series, not usually among the major stylistic groups of London, Canterbury, and Winchester, but some smaller workshops, notably that supplying dies to the moneyer Ecgwulf, regularly make mistakes. When an error is found in a coin inscription then, in order to assess its significance it is necessary to consider the stylistic group to which the coin belongs.

Adopting this approach to the identification of the Viking issues, only one coin in the hoard among the 55 or so Two-line coins in Alfred's name can be identified as an official Anglo-Saxon product with any confidence. It is a substantial fragment of a coin of the London moneyer Hereferth (no. 1). Even here the attribution is not certain, for it has the exceptional feature of four pellets around the central obverse cross which is only otherwise found among London style dies on *BMC* 338, also of Hereferth. This latter coin is of full weight (1.65g/25.5 gr.) and good style, but it has a worrying intrusive X in the obverse legend, XEL XFR ED RE. Of the remaining 'Alfred' Two-line coins in the hoard, 28 have been identified as probable Viking issues and 32 small fragments have been assigned to an

¹¹ Coins in a hoard may have consistently lost weight through corrosion even where this is not immediately obvious from their condition: see the example cited in D. M. Metcalf, 'The monetary history of England in the tenth

century viewed in the perspective of the eleventh century', *Anglo-Saxon Monetary History*, edited by M. A. S. Blackburn (Leicester, 1986), pp. 133-57, at 151-3.

'uncertain' category. However, the ratio 1:28 among the positively identified coins probably understates the proportion of official coins in the hoard. One of the coins attributed to the Vikings in the name of the moneyer Ludig (no. 25) may actually be Anglo-Saxon, and among the uncertain fragments there are nine pieces which are quite likely to be official (nos 38–43, 45–6, and 50) and others that might be. It is probable, therefore, that the number of official coins of Alfred in the hoard is nearer to ten than the one actually identified, but even so this would still mean that the great majority of the coins (some five-sixths) are Viking.

b) *Viking issues in the name of Guthrum ('Æthelstan')*

Five coins in the hoard are in the name of Guthrum, king of the southern Danelaw in 880–90. These bring the number of known coins of his to 40, of which at least 30 came from the Cuerdale hoard and three from the Morley St Peter hoard. They carry his baptismal name, Æthelstan, and the title *rex*, together normally contracted to eight or nine letters and arranged in four sections as on Alfred's coins, e.g. ED EL ZN RE, ED EL TA RE. One coin in this hoard is novel in having an unabbreviated form in a continuous inscription, XEDELSTAN REX (no. 6). The literacy of the obverse, however, is not carried over on to the reverse, for the moneyer's name is quite garbled. It is not clear whether this coin belongs early or late in the issue. The other four coins add little to our knowledge of Guthrum's coinage, three of them being die-linked to coins from the Cuerdale hoard. This degree of die-linking is a little higher than we would expect, for a die-study of the whole issue to be published elsewhere suggests that we know only about a third of the dies originally used. Although Guthrum died in 890, in principle some of the coins in his name could be posthumous imitations, his name having been copied in the same way that Alfred's was. However, if such imitations do exist they cannot at present be distinguished.

c) *Viking issue in the name of Guthfrith*

The most interesting coin in the hoard is undoubtedly one with a quite new obverse inscription XGV DE F[]RE (no. 7). These letters are clear, save for the penultimate one of which only the angled right-hand foot is visible. It could be an A or an R, but R for *rex* is the letter one would expect in this position. Part of the surface of the die face between the V and the D had evidently flaked away before striking leaving an area of the metal raised, but it does not appear to have effaced any of the inscription. The legend was apparently laid out in four groups of two letters as on most of Alfred's and Guthrum's coins, so the portion missing from the edge of the coin would presumably have carried one letter, the last of the ruler's name.

Although the obverse inscription is incomplete, the first five letters GVDEF- are sufficient to identify the name, for they could only reasonably represent Guthfrith or related forms of it. The presence of a D rather than an Ð (*eth*) could be a simple die-cutter's error, but it may reflect a genuine sound change. This substitution is often found in other late ninth-century coin inscriptions, e.g. on Guthrum's coins where his baptismal name Æthelstan always begins ED-, on one by his moneyer Guthhere spelt GVDHEIE,¹² and on coins of Alfred's moneyer Cuthberht who is regularly spelt CVDBERHT. The introduction of a medial E could suggest an attempt to Anglicize the name or reflect influence in the die-cutting of the Continental Germanic name *Godafrid*.¹³ The second element beginning

¹² BMC Alfred 329.

¹³ As has been argued in the case of later frequent occurrences of 'Godefrid' in Denmark; G. Fellows Jensen,

Scandinavian Personal Names in Lincolnshire and Yorkshire (Copenhagen, 1968), p. 110. The form 'Godeuert' for *Guthfrithr* occurs in Domesday Book; Fellows Jensen, p. 110.

with F is only likely to be *-ferth*, *-freth*, *-frid*, *-frithr*, *-frøthr*, etc., which are related and in practice were interchangeable according to the language and dialect of the user. The name could be of Old English, Continental Germanic, or Scandinavian origin, but in the context of a late ninth-century ruler in the Danelaw we should presumably interpret it as the Old Norse *Guthfrithr/Guthfrøthr*. As on Guthrum's coins, the name must have been contracted or abbreviated so that with the title it would fit into eight letters, and the legend is probably to be completed +GV DE FD RE or +GV DE FR RE.

The moneyer of Guthfrith's coin is 'Theie' (ΘΕΙΕ), which is probably to be interpreted as OE *Dæg* (modern 'day'), a rare name in this uncompounded form, but more familiar in *Dægbeorht* and *Dægmund*. The moneyer is otherwise known only from another coin in the Ashdon hoard (no. 16), in this case in the name of Alfred. Both specimens are in a similar style that may give some clue to their origin. They have a large plain inner circle leaving a narrow margin for the inscription which is in small delicate letters. On the reverse the O in MONE has short lines radiating from it like a sun. This type of O is also found on a blundered halfpenny of 'Ineg' from the Stamford hoard (Grierson¹⁴ no. 37). It has the same narrow margin and delicate lettering and seems to be the work of the same die-cutter. Several other coins exhibit this narrow margin although the style of lettering varies to some extent, e.g. pennies: Guthrum, Iudelberd (*SCBI Merseyside Museums* 146); 'Alfred', Winig(er) (*BMC* 392); and 'Alfred', blundered moneyer (*BMC* 362); halfpennies: all 'Alfred' and from Stamford hoard, 'Tilewine' (Grierson nos 33 and 44), 'Rafing' (Grierson no. 36), and 'Erifer' (with Lincoln monogram, Grierson no. 49). Several factors suggest that this style was popular in the north-east Midlands, namely the Lincoln monogram halfpenny, the penny of Winiger who went on to strike the St Edmund Memorial type and later coins of Edward the Elder in a style that Lyon associates with the Five Boroughs region, possibly Stamford,¹⁵ and thirdly the presence of so many coins of this style in the Stamford hoard. There is therefore a strong possibility that Guthfrith's coin was struck not at York but in the region of the Five Boroughs.

Who was the Guthfrith who issued this coin? The name was borne by a number of Viking rulers, including the famous king of Denmark (*d.* 810) and two tenth-century Viking kings of Dublin. Keeping in mind that the coin must have been struck sometime between the early 880s, when the Two-line type was introduced, and *c.* 895, the latest likely date for the deposit of the hoard, there is only one plausible candidate recorded in the sources. The next Viking king of York mentioned after Halfdene I is Guthfrith (called Guthred in one text), who ruled from *c.* 881 or *c.* 883 until his death on 24 August 895.¹⁶ He was apparently a Christian, and there is a colourful account of his election and swearing of an oath over St Cuthbert's remains, but otherwise we know little about his reign. He was buried in York Minster. As Guthrum's counterpart in the northern Danelaw he is a person one could expect to have issued coins, as his successors did. Indeed, until 1961 the late York regal coinage in the name of Cnut was generally attributed to Guthfrith.¹⁷

The fact that the new coin was probably struck not in Northumbria but in the Five Boroughs need not prevent its being attributed to the king of York. The history of this period derives almost wholly from West Saxon sources which say little about the internal affairs of the Danelaw. Guthfrith may have enjoyed some authority south of the Humber – the chronicler Æthelweard records some activity of the York Danes in an area west of

¹⁴ P. Grierson, 'Halfpennies and third-pennies of King Alfred', *BNJ* 28 (1957), 477–93.

¹⁵ C. E. Blunt, B. H. I. H. Stewart, and C. S. S. Lyon, *Coinage in Tenth-Century England* (London, 1989), p. 54.

¹⁶ A. P. Smyth, *Scandinavian York and Dublin*, vol. 1

(Dublin, 1975), pp. 41–7.

¹⁷ C. S. S. Lyon and B. H. I. H. Stewart, 'The Northumbrian Viking coins in the Cuerdale hoard', *Anglo-Saxon Coins*, pp. 96–121, at p. 116.

Stamford, although it may have been no more than raiding.¹⁸ Moreover, the Vikings had a plural notion of kingship so that several leaders might have been recognized in the same region at one time, including the unidentified King Halfdene of the coins.¹⁹ The geographical pattern of minting in this imitative phase is still very unclear, but if as seems probable the coinage in York started later than that in the south and Guthfrith had required coins in his own name for some political purpose, he might well have commissioned them from a moneyer in the southern Danelaw. Alternatively, this new coin may be merely a southern imitation of a coinage issued at York. Several explanations are therefore available, and while we cannot rule out the possibility that there was another Viking leader of the same name in the southern Danelaw, the probability is that the Guthfrith of the coin was the well known and powerful king of York. Whatever the circumstances lying behind this issue, it is evident that Guthfrith's coinage can only have been very small. It would be an over-simplification to say that based on surviving specimens Guthrum's named coinage was 40 times larger, but comparing the numbers of their coins does give some idea of the relative scale of production.

d) Viking issues in the name of 'Alfred' by Danelaw moneyers

It has recently been argued that a significant proportion of the moneyers named on the Two-line coinage in Alfred's name were men operating at mints in the Danelaw quite outside Alfred's control.²⁰ The use of Alfred's name rather than that of a local ruler is explained as a desire to emulate the designs and legends of a successful neighbouring coinage, a practice common among states that are issuing coins for the first time as the Anglo-Vikings were.

In the Ashdon hoard twelve coins fall into this category. Elda (no. 10) was also a moneyer for Guthrum, and Theie (no. 16) struck the coin of Guthfrith. Winig (nos 18–19) was a prolific moneyer in the succeeding St Edmund Memorial issue and after the reconquest of the Danelaw he produced coins for Edward the Elder of a style associated with the east Midlands.²¹ The moneyer Simun (nos 11–15) is shown by the weight distribution of his coins and the find evidence to have been working in the southern Danelaw, and it is probable that he is the same moneyer as the Sigemund, Simund, etc. who struck St Edmund Memorial coins.²² Coin no. 8 reading BALDO may be by the St Edmund moneyer Bado or possibly a corrupt version of another called Wigbald.²³ The moneyers of the two remaining coins in this class, Balere (no. 9) and Varolf (no. 17), are not recorded in other types, but the poor literacy and light weight of their coins show them to be Danelaw issues.

e) Viking issues in the name of 'Alfred' and copying names of West Saxon or Mercian moneyers

Nine coins with the name of 'Alfred' appear to be direct copies of official coins; further examples may also be present among the coins of uncertain attribution. The criteria for

¹⁸ *The Chronicle of Æthelweard*, edited by A. Campbell (London, 1962), p. 50 (s.a. 894). There are problems in understanding the transmitted text, for it has *pandaunt* which Campbell translated as 'possessed', but Keynes and Lapidge say this is impossible and prefer to emend the text to *praedantur* ('they plunder'); S. Keynes and M. Lapidge, *Alfred the Great. Asser's Life of King Alfred and Other Contemporary Sources* (Harmondsworth, 1983), pp. 190 and 337, n. 35.

¹⁹ *BMC Northumbria 869*; apparently a king of the 880s or early 890s.

²⁰ M. A. S. Blackburn, 'The earliest Anglo-Viking coinage of the southern Danelaw (late 9th century)', *Proceedings of the Tenth International Numismatic Congress, London 1986*, edited by I. A. Carradice (Wetteren, 1989), pp. 341–8.

²¹ Blunt, Stewart, and Lyon, pp. 53–4.

²² See note to coin no. 11 in the catalogue.

²³ E.g. ones from Lincoln and Stamford; M. Blackburn, C. Colyer, and M. Dolley, *Early Medieval coins from Lincoln and its Shire c. 770–1100* (London, 1981), p. 11 (not identified as imitative).

distinguishing imitations from the originals have been discussed above, and the specific grounds for each coin are set out in the catalogue. Of the nine coins, six are copies of moneyers of the London group (five of Ludig, although no. 25 may be official, and one of Tilewine), one copies a moneyer of the Canterbury group ('Diarwald'), and two copy a west Mercian moneyer (Cuthberht). The high proportion of imitations of Ludig can also be seen among the imitations in the Cuerdale hoard, and they occur among the few recorded single-finds of this period.²³ This is perhaps not surprising since Ludig was a prolific London moneyer during the early and middle years of the Two-line issue, the period when most of this class of imitation appears to have been produced. Imitations of Cuthberht and Tilewine are also well known from the Cuerdale hoard, but that of Diarwald is not. Most of the known imitations of the Canterbury group belong to a single phase late in the issue, for they mainly copy coins of the DORO type of Alfred or Archbishop Plegmund. The lettering on these is clearly based on the Canterbury style, but many have badly blundered legends. The Diarwald coin in the Ashdon hoard (no. 22) does not belong to this imitative group, for its style is different, making little effort to emulate Canterbury work.

Only one coin has been found to die-link with coins outside the hoard (no. 27, a die-duplicate of BMC 349 from Cuerdale), which is a much lower rate than among the coins of Guthrum, but this may be because a more complete photographic record of Guthrum's coins exists as they are so scarce that those that are not in museums have mainly been illustrated in sale catalogues.

f) Viking issues in the name of 'Alfred' with blundered or uncertain moneyers' names

Seven fragmentary coins have reverse inscriptions that are clearly blundered. Were they more complete, it might be possible to discern the names of Danelaw or official Alfredian moneyers underlying the legends. One piece (no. 34) has been found to die-link with coins outside the hoard enabling the reverse inscription to be completed, although it still makes little sense. Another (no. 35) appears to have a blundered form of a moneyer's name ending -berht, while a third (no. 33) may be a blundered version of 'Tilewine'. For the remaining four fragments no close parallels have been found.

g) Uncertain Anglo-Saxon or Viking issues

For 32 fragments I have hesitated to give positive attributions largely because they are too small for one to be able to judge their style or weight with any confidence or to recognize die-links with other coins. For several of them suggestions as to the moneyer concerned can be made, e.g. nos 38–46, but whether they are official coins or imitations is uncertain. Others have reverse legends that are otherwise unrecorded, such as nos 36–7 and 47–8. Some of the smallest pieces are no more than part of the central cross or outer border, and, although a careful check has been made, we cannot be sure that these do not belong to other fragmentary coins in the hoard.

The group is none the less interesting. It includes three coins (nos 39, 40, and 50) that may be of the Winchester style or imitations based on it. They would not affect date of deposit of the hoard, however, for they could belong to either the early or the late sub-groups that have been distinguished in the Winchester style. Another coin (no. 44) is by a moneyer He. . . stan, presumably Heahstan or Herestan although neither name has been previously recorded in the Two-line type. There was a Heahstan who used Winchester-style dies in the preceding Cross and Lozenge issue,²⁴ but if this is the same

²⁴ SCBI Oxford 247.

man the Ashdon coin is probably a Viking copy of a lost original for it is not in the Winchester style. One coin (no. 43) appears to be of the Canterbury style or an imitation of it, and like the Diarwald imitation it is of the main Two-line type rather than the later DORO variety. Five coins (nos 38, 41–2, and 45–6) may be coins or copies of the London style, of which the first is the most significant. It is most likely to be a coin of Beagstan who was the sole moneyer at London towards the end of the reign, but if it is one of his it would appear from the lettering to belong to the middle of the issue when he was also active.

h) Carolingian element

The four Carolingian deniers provide the *terminus post quem* for the hoard and potentially some insight into Viking contacts with the Continent. Three are of the *Gratia Dei Rex* type in the name of Charles the Bald (840–77), one from the mint of Rouen and two from *Curtisasonien*. The type was introduced in 864 and it continued unchanged at many mints after Charles' election as emperor in 876 and even after his death down to the end of the century or later. This is especially likely for the coins of *Curtisasonien*, for the three French hoards in which they were a major or dominant constituent – Juaye-Mondaye, Issy l'Évêque, and 'near Autun' (Luzy) – are all of the early tenth century.²⁵ No satisfactory division has as yet been made between the coins issued during Charles' reign and those produced in the following decade or two, so that the specimens in the Ashdon hoard cannot be closely dated. This is not true of the fourth coin, however, which is a Paris denier of Odo (888–98).

Geographically the coins form a reasonably compact group, with Paris and Rouen on the Seine and *Curtisasonien* in the same region but probably further south-west between Paris and Brittany, although its location has long been debated; it has been identified most recently with Courcassin near Corbon (Orne).²⁶ The one recorded Carolingian coin from the Stamford hoard, which was deposited at much the same time as the Ashdon hoard, or perhaps a little earlier, was also from the Seine valley, a *Gratia Dei Rex* obol of Saint-Denis.²⁷ This pattern is different from that of the mints represented in the earlier hoard from Laxfield, Suffolk deposited probably during the later 870s,²⁸ which had six coins of the *Gratia Dei Rex* period, of which one was from Rouen but five were from mints further north: Quentovic (two coins), Nivelles, Saint-Géry (Cambrai), and Laon. Admittedly, the numbers of coins involved are so small that comparisons must be treated with caution. Much more significant is the contrast shown by the c.1,050 Carolingian coins in the Cuerdale hoard (dep. c.905)²⁹ which were predominantly from Aquitaine and the Loire valley, with a smaller but significant group from Flanders, Lotharingia, and the Somme valley. From the Seine valley there were very few coins considering the size of the hoard – Rouen (–), St Denis (1), Paris (2), Chelles (–), Meaux (–) – and fewer still from the area to the south-west – Evreux (1), Lisieux (–), Bayeux (–), Deux-Jumeaux (–), *Curtisasonien* (1).³⁰ The only recorded Carolingian single-finds of this period from the

²⁵ I am grateful to Simon Coupland for this observation.

²⁶ P. Grierson and M. Blackburn, *Medieval European Coinage. I. The Early Middle Ages (5th–10th Centuries)* (Cambridge, 1986), pp. 635–7.

²⁷ R. H. M. Dolley and K. F. Morrison, 'Finds of Carolingian coins from Great Britain and Ireland', *BNJ* 32 (1963), 75–87, at 79.

²⁸ Dolley and Morrison, p. 79. The deposit date must be later than c.875 suggested there, for it apparently contained an 'IMPERATOR AGVST' coin of Saint-Géry (Cambrai) which dates after 876 if of Charles the Bald or after 882 if of

Charles the Fat. The hoard is in fact strong evidence for the former attribution, since the Anglo-Saxon element in so far as it is described could hardly be later than the 870s. However, I have been unable to find the partial hoard listing among the Banks MSS in the British Museum cited by Dolley and Morrison.

²⁹ Dolley and Morrison, pp. 80–81.

³⁰ If the majority of the coins in Cuerdale belong to the later ninth century a number of these mints may not have been operating then, but some certainly were including Paris, St Denis, Meaux, and *Curtisasonien*.

Danelaw are one of *Curtisasonien* from Beachamwell, Norfolk,³¹ one of Quentovic from Thetford, Norfolk,³² and an obol of Visé from the Thetford area.³³

The Carolingian coins in the Ashdon and Cuerdale hoards were clearly drawn from sources of different composition, but how far either find was representative of a pool of Carolingian coins circulating in the Danelaw rather than discrete parcels that had been brought from the Continent is debateable. The evidence of the 'peck-marks' on the Cuerdale coins suggests that they had seen some circulation in the Danelaw; approximately 50 per cent of those in the British Museum have 'pecks' (between one and seven per coin) which is a higher percentage than in some of the insular elements in the hoard.³⁴ But just how effective that circulation was in mixing the coins and to what extent the heavier Continental deniers would have been preferentially selected or rejected for transactions or for hoarding we do not know. The stock of Carolingian coins in the Danelaw was probably small enough for its composition to have been significantly influenced if large sums of money from one region of France were brought over, for example, on the arrival of the Great Army. The differences that are apparent between the Laxfield, Ashdon, and Cuerdale hoards suggest that this was the case. It is also likely that there was in addition some Frankish coinage arriving through regular contact with Vikings on the Continent or with the Franks themselves.

It is tempting to try to correlate the compositions of these hoards, and in particular the concentration of coins from the Seine region in the Ashdon hoard, with the known movements of the main Viking army on the Continent and its excursions to England in 884–5 and 892–6. The result is not particularly convincing. For the five years prior to 884 the army had been active in Flanders, the Somme valley, and Lotharingia, but not apparently further south. On their return to the Continent in 885 they did spend five years principally in the Seine valley and Burgundy, laying siege to Paris in 885–6 and taking tributes there in 886 and 889, but they moved north again for two years prior to their return to England in 892. A second army that joined them in Kent in 892 had spent the previous two years in the Somme valley. One would expect any coinage that the armies brought with them to have had a substantial northern element even if it also included plunder from earlier years and part of Odo's Paris tribute of 889. Unfortunately, the four coins in the hoard are not a sufficient number that we may assume them to be representative. They *could* therefore have come to England with one of the armies in 892, but it is perhaps more likely that they came by some other means possibly spread over a number of years in the period 885–90 when the Vikings were actively raiding up and down the Seine.

Pecking and bending

The Ashdon hoard provides clear evidence that 'pecking', testing the metal by cutting or stabbing with the blade of a knife, was practised by the Vikings in the southern Danelaw. This was widely employed in Scandinavia and the Slav lands around the Baltic from the late ninth until the late eleventh century.³⁵ In the British Isles it has been noted in

³¹ To be published by Blackburn and Bonser.

³² M. A. S. Blackburn and M. J. Bonser, 'Single-finds of Anglo-Saxon and Norman coins – 1', *BNJ* 54 (1984), 63–73, at 70.

³³ Of Louis the German; information from Dr Marcus Phillips.

³⁴ Detailed comparisons must await the publication of Miss M. M. Archibald's study of the 'peck-marks' on Cuerdale coins, but one's impression is that the Carolingian coins are much more heavily pecked than the St Edmund or

York regal series and possibly more than the Two-line coins.

³⁵ U. S. Linder-Welin, 'Graffiti on Oriental coins in Swedish Viking Age hoards', *Kungliga Humanistiska Vetenskapssamfundets i Lund Årsberättelse* 1955–56, III, pp. 149–71, at 152–3; B. Malmer, 'Methodological problems in editing and evaluating the Swedish Viking-age coin hoards', *Viking-Age Coinage in the Northern Lands*, edited by M. A. S. Blackburn and D. M. Metcalf (BAR Internat. ser. 122, 1981), II, 391–403, at 397–402.

Northumbria on the coins, ingots, and hack-silver in the Cuerdale hoard, and on three single-finds from the southern Danelaw: the denier of the *Gratia Dei Rex* type found at Thetford, Norfolk mentioned above, an 'Alfred' Two-line coin by the Danelaw moneyer Simun found at Cambridge,³⁶ and a Sword St Peter coin struck c.920–7 found near Louth, Lincolnshire.³⁷ Peck marks will no doubt be noticed on other finds now that attention has been drawn to their significance, for it is only comparatively recently that Miss Marion Archibald first noted them on Cuerdale coins.³⁸ Irish hoards in particular deserve to be studied.

In the Ashdon hoard 26 of the 71 pieces carry peck marks, but many of the fragments are so small that one would not expect them to be marked even if the coins they came from were. More significantly, of the 24 complete or substantially complete coins in the hoard 13 (i.e. 55 per cent) are peck marked. They are present in all the significant categories – Viking issues with rulers' names, those of Danelaw moneyers, those imitating official Alfredian coins or with blundered legends, and the Carolingian coins. The absence of pecks on the few fragmentary pieces that are or may be Anglo-Saxon issues is probably of no significance. Their presence on the coins of Guthrum and on those in the name of 'Alfred' by the moneyers Elda, Simun, and Winnig is of particular interest in demonstrating that pecking was carried out in the southern Danelaw, for as undoubted southern Viking issues it is most unlikely that these pieces received the peck marks while circulating in Northumbria. The number of marks on individual coins varies between one and three, and they do not seem to be concentrated in any particular category of coin. Given the fragmentary state of many of the pieces, the degree of pecking in this hoard is not amenable to detailed statistical analysis.

Another feature common among coins from Scandinavian finds and thought to have been an alternative method of testing the resistance, and hence the purity, of the metal is deliberate bending and rebending.³⁹ Seven (or possibly nine) coins in the Ashdon hoard (nos 9, 10, 13?, 18, 19, 33?, 58, 68, and 70) appear to have been treated in this way, each with one bend but sometimes bent flat again leaving a ridge. Nos 9 and 19 have peck marks on and at right angles to the ridge, suggesting that they had been bent before being pecked. Unlike pecking, bending seems also to have been practised by the Anglo-Saxons, for Professor Malmer has noted bent coins among a number of tenth- and eleventh-century English hoards, although no systematic study has yet been carried out.

Date of deposit and significance of the hoard

The coin of King Odo (no. 71) provides a strict *terminus post quem* for the hoard of 888, but other elements present enable one to place further limits on the likely period of deposit. The Two-line coins that are probably Anglo-Saxon or are based on Anglo-Saxon models belong to sub-styles of early and middle date, while the wide range of Viking imitations and derivatives also suggests in general terms an assembly made well into the currency of the Two-line issue. Based on Dolley and Blunt's dating of c.887–99 for the type, the hoard could hardly be much earlier than the mid 890s. But as noted above it can now be argued that Alfred introduced the type in the early 880s, so that a date of deposit as early as c.890 can be contemplated.

³⁶ *MEC* 1:1367; the peck on the reverse is not mentioned there as it is of an unusual type akin to a scratch.

³⁷ M. A. S. Blackburn and M. J. Bonser, 'Single-finds of Anglo-Saxon and Norman coins – 3', *BNJ* 56 (1986), 64–101, at 90, no. 113.

³⁸ M. M. Archibald, 'Coins and Currency', in J. Graham-

Campbell, *Viking Artefacts. A Select Catalogue* (London, 1980), pp. 103–22, at 120, no. 405.

³⁹ Malmer, p. 398. The degree and complexity of the bending is duly noted in recent volumes of the *Swedish Corpus*; cf. *CNS* 1.4, pp. xviii–xix.

It is still more instructive to consider what is not represented in the find. There are no coins or imitations of the later varieties and sub-styles of Alfred's Two-line type, such as the DORO variety at Canterbury, the neat London style of the moneyer Beagmund, or the more regular late Winchester style, each of which probably belongs to the last five years or so of the reign. The prolific *Orsnaforda* and Canterbury-style imitations, both of which also appear to be late groups, are likewise absent, and so too the Viking regal coinage of York which probably commenced in the later 890s.

The most significant absentee, however, given the location of the findspot, is the St Edmund Memorial issue. The large scale of production evident from the Cuerdale hoard suggests that the type soon dominated the currency of much of the southern Danelaw, and it may well have effectively demonetized the Two-line and other issues previously in circulation there. Blunt, in his study of the St Edmund issue, dated its introduction c.892 on the basis of three die-duplicates which combine a St Edmund obverse with a reverse(?) reading +AELFRED REX DO.⁴⁰ These he regarded as official products of the Canterbury mint, and since this was thought to have been closed in 892 with the arrival of the Viking armies in Kent,⁴¹ the 'St Edmund/Alfred' coins could not have been struck later than that year. However, although these coins are of good workmanship and copy (incorrectly) a Canterbury inscription, they are not in fact in the style of the Canterbury die-cutter, and their weights conform to the lighter Danelaw standard rather than that of Alfred. They should be seen, then, not as official Canterbury issues but as products of the Danelaw, either copying regular St Edmund and Alfred issues or perhaps leading the St Edmund series in a transitional phase when the die-cutter was experimenting with new designs. Moreover, in the British Museum there is a coin of Archbishop Plegmund's simple Two-line type, contemporary in style and fabric with Alfred's, that has been overstruck on a coin of the St Edmund Memorial issue,⁴² demonstrating that the Canterbury mint was still in operation after the beginning of the St Edmund issue. Indeed, I would argue that the continuity of moneyers at Canterbury from Alfred to Edward the Elder is such that the mint appears to have been active until virtually the end of the reign without any obvious sign of a previous interruption. One is, therefore, thrown back on other evidence for dating the start of the St Edmund coinage, albeit of a less decisive character. The relative size and complexity of the St Edmund issue and of the preceding imitative phase are matters to be weighed, but they are difficult to quantify. The fact that in the Cuerdale hoard the majority of Viking imitations that one might give to the southern Danelaw (save for the late 'Canterbury' group which is difficult to locate) copy official coins of early and middle styles rather than the later ones suggests that this phase had ceased by the mid 890s. But the firmest evidence for dating the issue is that it lay after the deposit of the Stamford and Ashdon hoards and, because of the Plegmund overstrike, before the last years of Alfred's reign. A realistic estimate would be c.895 with latitude of several years either way.

The other coin type that is notably absent from the hoard is the London Monogram issue and its imitations. Here there is a marked contrast with the Stamford hoard⁴³ which contained at least ten London Monogram imitations and derivatives among the 39 recorded coins. The hoard is also unusual for its large number of halfpennies (at least 24). What is not clear is whether the difference is one of geography or date. The London Monogram prototype belongs early in the Two-line phase, to judge from the use of a

⁴⁰ C. E. Blunt, 'The St Edmund Memorial coinage', *Proc. Suffolk Inst. of Arch.* 31:3 (1969), 234-55, at 242 and 253. The three die-duplicates are BMC 2 (1.18g/18.3gr.), Blunt collection (1.40g/21.6gr.), and Assheton collection (frag.).

⁴¹ Dolley and Blunt (note 7), p. 86.

⁴² F. Banks and F. Purvey, 'Two overstruck pennies of Archbishop Plegmund', *BNJ* 36 (1967), 189-90.

⁴³ C. E. Blunt and R. H. M. Dolley, 'The hoard evidence for the coins of Alfred', *BNJ* 29 (1959), 220-47, at 239-40.

portrait and the evidence of the London (Bucklersbury) hoard.⁴⁴ This poorly recorded find appears to have been composed largely of London Monogram coins with just a few of the Two-line type, the only moneyer recorded being Wulfred who operated at Winchester throughout the issue. We may infer that the Monogram issue then dominated the currency in London because few if any Two-line coins had been struck there, although the type had already been introduced at Winchester and perhaps at other mints. The imitations may also be generally early, as that in the name of Halfdene surely is since it mules a London Monogram reverse with one of the earlier and much rarer Two Emperors type.⁴⁵ Two regular coins overstruck at Canterbury and at a west Mercian mint⁴⁶ suggest that its currency was in practice limited regionally or chronologically or both. One would expect London's influence to have been greater in north Essex than at Stamford in Lincolnshire, and among the Two-line coins from Ashdon a high proportion are in the name of London moneyers. The absence of the Monogram type, then, implies either that the Ashdon hoard is later than that from Stamford or that the London Monogram imitations have a more northerly origin and perhaps that the currency in East Anglia was largely limited to Two-line issues by a preference for the locally produced type.

Weighing all these factors, the Ashdon hoard is likely to have been deposited between c.890 and c.895. As we have seen, the Carolingian coins may have been brought to England in 892 by the two Viking armies that had been campaigning for many years in central and then in northern France, one having taken tribute from Odo at Paris in 889. But they could have come over with some smaller band or through trade in earlier years. Nor can we with any assurance link the hoard's non-recovery with the activities of the same armies in England between 892 and 896 when, with reinforcements from East Anglia and Northumbria, they rampaged around England engaging in conflicts that tested the new English defences to their limits.

The political status of Essex in the 890s is somewhat uncertain, for although it was within the Danelaw according to the boundary described in the treaty between Alfred and Guthrum,⁴⁷ the *Anglo-Saxon Chronicle* annal for 896 refers to the death of one 'Beorhtwulf, ealdorman of Essex' implying that Alfred may either have retained or recently regained control of at least part of that region.⁴⁸ However, Ashdon, lying in the extreme north, on the boundary with East Anglia, is likely to have remained in Danish hands. That the hoard was the property of a resident of the Danelaw, be he Viking or Anglian, there can be no doubt. The predominance of light Danelaw issues, the Carolingian element, and the presence of 'pecked' and bent specimens distinguish the coins from those that circulated in Wessex and English Mercia. A very different picture is presented by the Leigh-on-Sea hoard,⁴⁹ which appears to have consisted entirely of regular issues of Alfred, predominantly of Canterbury style, and without peck marks, to judge from the published photographs which admittedly is hazardous. The presence of both the simple Two-line type and the DORO variety suggests a date of deposit of c.895–900, rather than 893 as proposed by Blunt and Dolley. If the find were typical of the coinage in local circulation rather than a purse taken from Kent, of which we cannot be certain, it would imply a very different currency and political authority in the south from that in north

⁴⁴ Blunt and Dolley, pp. 234–5; H. E. Pagan, 'Two groups of coins of Aelfred with the London Monogram', *NCirc* 1983, 121.

⁴⁵ BMA 300; illustrated Dolley and Blunt (note 7), pl. 10, 7.

⁴⁶ Banks and Purvey, *MEC* 1:1363.

⁴⁷ Keynes and Lapidge (note 18), pp. 171–2; but for an

alternative interpretation of the treaty see D. N. Dumville, 'Alfred and Guthrum', in his *Wessex and England from Alfred to Edgar* (Woodbridge, forthcoming).

⁴⁸ C. Hart, 'The ealdorm of Essex', *An Essex Tribute*, edited by K. Neale (1987), pp. 57–84, at 60–2; Keynes and Lapidge, p. 289 n. 29.

⁴⁹ Blunt and Dolley, pp. 235–8.

Essex. However, the grave in which the coins were found appears to have been a pagan one, the skeleton being accompanied by a horse and sword,⁵⁰ so that the evidence is ambiguous.

Conclusions

The Ashdon hoard provides a valuable insight on the nature of the coinage circulating in the southern Danelaw during the early 890s, prior to the introduction of the St Edmund Memorial issue. It implies a surprisingly uniform currency consisting almost entirely of Two-line coins, the great majority of them Viking issues. The technical standard of production at the Danelaw mints was very variable, ranging from the excellent products of the moneyers Elda and Simun, good enough to have been regarded until recently as official issues of Alfred, to extremely crude illiterate imitations. The two Danelaw coins analysed metallurgically have finenesses of c. 95 per cent 'silver' (see appendix 2), which are as good as those of Alfred's official issues. The weight distributions of many of the Danelaw coins are, however, both lighter and wider than those of Alfred's, but it is clear that the lighter standard was intentional, following the old Anglian weight system, and was not merely the product of lax or fraudulent administration on the part of the Vikings. Indeed the use of such a standard implies some participation of the indigenous Anglian community in economic affairs, as one might expect. The Stamford hoard, so far as one can judge from the surviving information, equally implies a currency dominated by Viking issues, although whether its different range of types represents a difference in the composition of the currency in the east Midlands rather than in date is open to question. We will be in a better position to judge this when more work has been done on the chronology and origin of the various issues of this initial phase of Viking coinage.

CATALOGUE OF COINS IN THE HOARD

Arrangement

All the coins are illustrated on the plates. In the transcriptions of the legends a pellet below a letter indicates that it is only partly visible and the reading is conjectural. An upright stroke has been represented as an I with a pellet below it even where it is likely to be part of another letter.

The coins were cleaned and some fragments stuck together at the British Museum, while further pieces that were subsequently matched were joined at the Fitzwilliam Museum, using a soluble glue. Four coins (nos 8, 11, 17, and 20) were deliberately left uncleaned to show the state in which they were found; their recorded weights will be a little higher than if they had been cleaned. The die-axes have been recorded to the nearest 10° using an instrument made from a protractor, unless the piece is so fragmentary that the orientation of the design is uncertain.

The coins are all in the Fitzwilliam Museum, Cambridge save for four in the British Museum (nos 6, 7, 16, and 71) and two in Saffron Walden Museum (nos 12 and 25).

⁵⁰ M. Biddle *et al.*, 'Coins of the Anglo-Saxon period from Repton, Derbyshire: II', *BNJ* 56 (1986), 16–34, at 27.

I. OFFICIAL ANGLO-SAXON ISSUE

Alfred of Wessex (871–99)

<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
1. Moneyer Hereferth (OE). London style, probably official XE| JRED| | HER| | | | (HE ligatured)		0.60g (9.3gr.)	3 frags.	180°	-
Probably a regular coin despite the four pellets around the obverse central cross, which is found on one other coin of Hereferth's (<i>BMC</i> 338). The detached fragment appears from its distinctive surfaces to belong to the other two pieces.					

For other coins possibly official issues, see nos 25 and 36–67, particularly 38–43, 45–6 and 50.

II. VIKING ISSUES

Guthrum (Æthelstan), king in the southern Danelaw (880–90)

2. Moneyer Aelven (OE <i>Ælfwine?</i>) XED EL I\ RE AEL:| · /VEN		1.12g (17.3gr.)	whole coin	260°	-
From the same dies as the only other known specimen of this moneyer (<i>BMC</i> 91).					
3. Moneyer Berter (OE <i>Beorhtthere</i> or CG <i>Berter</i>) XE| JEL| JRE | JER| JTER		0.82g (12.7gr.)	2 frags.	0°	1/-
From different dies from the other four known specimens. The name could but need not be of Continental origin, for this would be an acceptable Anglian form of <i>Beorhtthere</i> although the loss of the final <i>e</i> is unusual.					
4. Moneyer Berter JED| EL I\ RE BER| TE|R		0.78g (12.0gr.)	4 frags.	90°	-
From same dies as a coin in the Assheton collection, ex Cuerdale hoard.					
5. Moneyer Elda (OE) [XED EL T]AN RE | J · /MEE| |		0.49g (7.6gr.)	frag.	300°	-
From the same obverse die as <i>BMC</i> 99 and its die-duplicate in the Assheton collection, ex Cuerdale hoard. Elda is the only moneyer for Guthrum who uses the formula <i>me fecit</i> . See also no. 10 below.					
6. Uncertain moneyer XEDELSTAN REX EIVDI| JILIGL or LGILI| JIDME (letters reversed or inverted)		1.24g (19.8gr.)	5 frags.	340°	1/1
This coin has the longest and most literate obverse inscription known, combined with a quite blundered reverse that has defied interpretation. [British Museum]					

Guthfrith, king of York (c.883–95)

7. Moneyer Theie (OE <i>Daeg?</i>) XGV DE F| JRE DEIE:| · · /MO| |		0.83g (12.8gr.)	frag.	340°	-
(rays from O)					
For a discussion of the attribution and significance of this coin, the first recorded of Guthfrith, see text above. Same moneyer as no. 16 below. [British Museum]					

In the name of 'Alfred' by Danelaw moneyers

8. Moneyer Baldo, Bald or Wigbald? (CG <i>Baldo</i> , OE <i>Beald</i> , or OE or CG <i>Wigbald</i>) +EL FR ED RE BALD: · · /OME		1.08g (16.7gr.)	uncleaned, slight chip	120°	-
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Obverse	Reverse	Weight	Condition	Die-axis	Pecks obv./rev.
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This reverse inscription was not represented in the Cuerdale hoard, but a coin with the same readings (thus possibly from the same dies) was in the F. J. Shand sale (Glendining 8 March 1949, lot 319, not illustrated). Their poor literacy and the weight of the Ashdon specimen show this to be a Danelaw issue. This may be the same moneyer as Bado of the St Edmund Memorial coinage, whose name is there rendered as BADOAAHE, BADOAHEN, etc. However, this coin is very similar in style to one of the moneyer Wigbald (*BMC* 387), suggesting the possibility that the inscription is in fact a blundering of VIGBALD. Wigbald was also a St Edmund moneyer.

9. Moneyer Balere (OE *Bealdhere*?)
 XEL FR ED RE BALERE/· · · /MON 1.05g (16.2gr.) whole, bent 160° 1/1
 V and L inverted,
 O with rays,
 N retrograde)

Moneyer previously unknown. This is an acceptable Anglian form of the West Saxon name *Bealdhere*. The light weight, anomalous style and inverted letters show this is a Danelaw issue.

10. Moneyer Elda (OE *Elda*)
 XEL FR ED RE · · · ELDA/ · · · /ME FEC 1.30g (20.1gr.) chipped, bent 320° 1/-
 (once)

Elda was a Danelaw moneyer who struck coins in the name of both Guthrum and Alfred (cf. no. 5 above).

11. Moneyer Simun (OE or GC *Sigemund* or OF from Hebrew *Simun*)
 XEL FR ED RE SINVIH/· · · · /HE FEC 1.25g (19.3gr.) 5 frags., 250° -/1
 (suspension mark over
 complete,
 VII) uncleaned

The moneyer 'Simun' was apparently working in the southern Danelaw. All his coins have the formula *me fec(it)*, which is otherwise found only on coins of the moneyer Elda and in the St Edmund Memorial issue. Their weights are aligned with the Danelaw standard of c. 1.45g (22.5gr.) rather than the West Saxon and Mercian c. 1.6g (25 gr.). Moreover the presence of five or six specimens in the Ashdon hoard compared with only three in the much larger Cuerdale hoard,⁵¹ suggests that the mint was nearby, especially since the only single-find is one from Cambridge.⁵²

The name 'Simun' was regarded by Smart as the biblical *Simon*,⁵³ but it is perhaps more likely to be equated with the St Edmund moneyer SIGEMUND, SIMUND, etc. On each of his dies in the name of 'Alfred' there is what appears to be a mark of abbreviation over the last part of the name which could represent the loss of the D from *Sigemund* or VS from Latin *Simunus*. On four specimens in this hoard the mark above the VN has a curious tadpole-like form with its 'head' to the right, which prompted the suggestion from one colleague that it could perhaps be a 'minuscule' D, but on MEC 1:1367 the 'head' points to the left while on *BMC* 370 the mark is a bar with two tapering ends so that the interpretation, although possible, is unlikely.

The style of the eight substantially complete specimens is reasonably consistent, with strong clear lettering and a fairly thick inner circle. A notable feature of several obverse dies is the use of wedge-shaped uprights for the letters F, L, and R (e.g. on nos 11, 12, and 14), and the way in which the letters slope backwards. This style has also been observed on other Danelaw coins including some imitations of the official moneyer 'Ludig' (e.g. nos 23 and 24), and these are probably the work of the same die-cutter.

12. Moneyer Simun
 EL FR ED REN SHIVIH/· · · · /HE FEC 1.17g (18.1gr.) whole 10° -/1
 (contraction mark over
 VII)

[Saffron Walden Museum]

⁵¹ Two are cited in Hardy's listing of the hoard and one is among the Armitage fragments in the British Museum.

⁵² MEC 1:1367.

⁵³ V. Smart, *SCBI Cumulative Index of Volumes 1-20* (London, 1981), p. 67.

	<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
13.	Moneyer Simun XEL FR ED RE	SIHVH/· · · /HE FEC· (contraction mark over VII)	1.18g (18.2gr.)	chipped, ?bent 200° (once and rebent)		1/-
14.	Moneyer Simun EL FR| JREX	SIN| /· · · /HE FEC· (N retrograde)	0.87g (13.4gr.)	2 frags.	160°	-
15.	Moneyer Simun X| JRE	| | (only contraction mark visible)	0.20g (3.1gr.)	2 frags.	30°	-

Coins of Simun are the only ones known to carry this contraction mark. These fragments do not appear to belong with any others in the hoard.

For another possible coin of the moneyer Simun see no. 56.

16.	Moneyer Theie (OE <i>Daeg?</i>) XEL FR ED RE	· · DEIE· / · · /· MONE· · (O with rays, N retrograde, ON liga- tured)	1.14g (17.6gr.)	complete, 3 frags.	290°	-/3
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The moneyer is only otherwise known from the coin of Guthfrith (no. 7 above), [British Museum]

17.	Moneyer Varolf (CG) XEL ER EL RE	VARO· / · · /LFDI· (F inverted)	1.25g (19.3gr.)	5 frags., uncleaned	0°	-
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Two coins from the Cuerdale hoard appear to be by the same moneyer; *BMC* 197 reading VARIOVLDI (L inverted) weighing 1.33g/20.5gr. and *BMC* 363 VAROLF (retrograde) weighing 1.35g/20.8gr. Taking the three inscriptions together, the intended form of the name would appear to be *Varolf*, the additional DI in two of them being presumably space fillers (cf. no. 8). This name form, particularly the A and O, suggests that it is the Continental *Varolf*, although it could be OE *Wærwulf* as interpreted by a Continental die-cutter.

18.	Moneyer Winig (CG <i>Wineger</i>) EL JED REX	VVINIG/ · · · /MONE (NS retrograde, O with rays, NE ligatured)	0.98g (15.1gr.)	3 frags, bent (once)	340°	-
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The moneyer is known from two other coins in Alfred's name from the Cuerdale hoard (*BMC* 392–3), the latter reading VVINIGERVS. He went on to strike St Edmund Memorial coins reading VVINEGER, VVINIGER, etc.

19.	Moneyer Winig XEL FR ED RE	VVINIC/ /MONE (NS retrograde, O with rays, NE ligatured)	1.19g (18.4gr.)	whole, bent (once)	260°	1/2
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The first two letters of the reverse have an unusual form and may have been intended as Old English *wynns*.

In the name of 'Alfred' and copying names of West Saxon or Mercian moneyers

20.	Moneyer 'Cuthberht' XEL FR ED RE	CADB/ · · /ERIIT· ·	1.05g (16.2gr.)	whole, uncleaned	170°	1/-
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<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
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The irregular style, error in the reverse legend, small flan, and light weight show this to be an imitation of the prolific West Mercian moneyer Cuthberht; cf. *BMC* 248 and Carlyon-Britton 939, also imitations.

21. Moneyer 'Cuthberht'
XEL FR ED RE | JVDB/ · /ERHT 1.28g (19.4gr.) 5 frags., small 190° -
chip missing
Weakly struck in parts. The form of the lettering, particularly the Rs, and the lack of ornamental pellets on the reverse suggest this is an imitation.
22. Moneyer 'Diarwald'
| JR E| JREX DIAR/ · /M | 0.71g (11.0gr.) 2 frags. 150° -
Diarwald is a regular Canterbury moneyer, but the style of this coin is quite different from that of the Canterbury die-cutter. The V which should be at the end of the top line of the reverse is missing. The pellet in the centre of the obverse cross is reminiscent of Winchester-cut dies, but this is coincidental for it has an obverse legend divided into four parts and its style is otherwise anomalous.
23. Moneyer 'Ludig'
| JL FR ED RE LVDIG/ · /I | OH:- 0.62g (9.6gr.) 3 frags. 110° 1/-
The division between official coins and imitations of the prolific London moneyer Ludig is difficult to draw since some of the imitations strive to copy both the letter forms and the text of the originals. Official London dies typically have light thin strokes with minimal wedges and serifs, as found on coins of consistently good literacy and weight of the moneyers Tilewine, Hereferth, Ludig, Beagstan, and others. A number of imitations of the first three of these moneyers are easy to recognize, but there are borderline cases of good weight and literacy where the style is equivocal. The two forms of M that commonly occur – one with a crescent top and the other with a central vertical stroke – can be found on both official coins and imitations. With the letter O, official coins generally have the simple round form while on imitations it is often surrounded by four rays, but is questionable whether some coins with this latter form (such as *BMC* 359 and no. 25 below) may not be official issues, for otherwise there is little in their style and weight to doubt them.
Of the five 'Ludig' coins in the Ashdon hoard, four are fairly clearly imitations. The reverse inscription of no. 27 is blundered and its die-duplicate is light in weight (1.32g/20.4gr.). Nos 23 and 24 are not in the London style, having lettering and a central cross that are too heavy and with wedges too pronounced. Their weights, making due allowance for the missing parts, are also much too light for official coins at c.1.0g (15gr.) and c.1.25g (19gr.). In fact the dies of these two coins appear to be the work of the same die-cutter as those of the moneyer Simun, with wedge shaped uprights to the F and R and certain letters on the obverse leaning backwards (cf. nos 11, 12, and 14). No. 26, of which little more than half survives, is probably also imitative, for although the lettering is close to the London originals, the trefoil of pellets at the top and sides is otherwise unrecorded on official London dies and the weight (c.1.0g/15gr., if whole) is much too light for an official coin, even allowing for the corrosion.
As already indicated, the status of the fifth coin (no. 25) is less certain, since in composition and form it lies between no. 24 and the best official coins. Its letters and central cross are thinner with less pronounced wedges, but they are slightly larger than is usual and the weight (1.36g) is rather light. It remains to be seen whether this and the related *BMC* 359 are imitations or regular London coins.
24. Moneyer 'Ludig'
EL FR ED REX LVDIG/ · /MON 1.18g (18.2gr.) chipped 40° -
(stroke after X) (O with rays,
N retrograde)
25. Moneyer 'Ludig'
EL FR ED REX · LVDIG/ · /MON 1.36g (21.0gr.) whole 350° -
(O with rays)
Possibly an official issue: cf. *BMC* 359, [Saffron Walden Museum]
26. Moneyer 'Ludig'
XEL | JRE · LVDIG/ · /M | 0.48g (7.4gr.) 3 frags. 70° -

	<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
27.	Moneyer 'Ludig' [E]L FR [E]D REX	1.[V]DE/-: -[·]/EIM[O]	0.56g (8.6gr.)	4 frags.	220°	-/3
	Same dies as <i>BMC</i> 349.					
28.	Moneyer 'Tilewine' AΛ FR ED RE	TILE:-/-: -[·]/IVNE:- (N retrograde, NE ligatured)	1.16g (17.9gr.)	whole	220°	-
	The style, the exceptional form of obverse legend commencing AΛ, and the blundered reverse shows this to be an imitation. The use of an initial A in <i>Alfred</i> reflects Anglian dialect and contrasts with Kentish <i>Elfred</i> found on most Canterbury and London dies.					

In the name of 'Alfred' with blundered or uncertain moneyers' names

29.	[] [E]P[] []	1L[] [·] [·] []	0.20g (3.1gr.)	frag.	180°	-/1
	Reverse inscription hitherto unrecorded.					
30.	[] [R] ED R[] []	R[]E? [·] [·] [·]BOD (O with rays)	0.61g (9.4gr.)	2 frags.	210°	-
	Reverse inscription hitherto unrecorded.					
31.	EL FR ED[] [E]	RDO[] [·] [·]LR[] [·] on [] [R]L[] [·] [·]ODR (letters reversed or inverted, O with rays)	0.88g (13.6gr.)	2 frags.	-	1/-
	No close parallels have been found for the curious letter forms used here.					
32.	EL FR ED[] []	[R?] [·] [·]HOIF (F reversed)	0.75g (11.6gr.)	frag.	90°?	-
	The lower line of the reverse may represent MON blundered.					
33.	E[] [R] ED[] [X] []	[]DE(or R)[] [·] [·] [·] [·]VVN[] []	0.67g (10.3gr.)	2 frags. bent? (once)		1/-
	The second line looks like a blundered 'Tilewine' coin (cf. <i>BMC</i> 374-8), but the D is quite inappropriate.					
34.	[] [R] ED R[]E? []	-[·]F[]E[] [·] [·] [·]VI[·] (T inverted)	0.64g (9.9gr.)	3 frags.	90°	1/1
	From the same reverse die as <i>BMC</i> 323 (1.30g/20.0gr.), on which the inscription is weakly struck. The first letter of the reverse appears to be an F or V, neither of which makes sense of the legend.					
35.	X[] [R]	[] [·] [·] [·]RHE[]	0.22g (3.4gr.)	frag.	200°	-
	There are no coins in <i>BMC</i> with a reverse ending like this. The small letters and narrow margin, the obverse inscription ending with R and the blundered reverse suggest that this is a Danelaw issue. The reverse may be a blundering of a name ending in <i>-berht</i> , such as Cuthberht, Hunberht, or Wynberht.					

III. UNCERTAIN ANGLO-SAXON OR VIKING ISSUES

36.	Moneyer A...de...?	[] [E]L FR E[] [] A[] [·] [·] [·]DE[] []	0.47g (7.3gr.)	3 frags	30°	1/-
	No moneyer with DE in this position on the lower line was previously known, but no. 37 has a similar reading. The obverse has wedge shaped uprights and backward sloping letters as on some coins of Simun, but unlike those this piece (but not no. 37) has a beaded inner circle.					
37.	Moneyer as last?	[] [E]D[] [] [] [·] [·] [·]DE[] []	0.35g (5.4 gr.)	2 frags	180°	-

- | | Obverse | Reverse | Weight | Condition | Die-axis | Pecks
obv./rev. |
|--|---|--|----------------|-----------|----------|--------------------|
| 38. | Moneyer Beagstan? | | | | | |
| | XEL[] | [] [] [] [] N or
N[] [] [] [] | 0.13g (2.0gr.) | frag. | - | - |
| Possibly an official coin of the London moneyer Beagstan. If so the beginning of the obverse inscription suggests that it belongs not to the late phase of London die-cutting, as the majority of his coins do, but earlier as <i>BMC</i> 202. | | | | | | |
| 39. | Moneyer Beornmær or Byrnhelm? | | | | | |
| | [] [DR] [] | [] B[] [] [] [] | 0.12g (1.9gr.) | frag. | - | - |
| The close spacing of DR on the obverse suggests that this is a Winchester style die with the legend divided into three rather than four parts, in which case it would be a coin of Beornmær or Byrnhelm, although neither is known with a pellet before his name. The arrangement of the letters DR would be consistent with both early and late styles of Winchester die-cutting. | | | | | | |
| 40. | Moneyer Beornmær? | | | | | |
| | Al[] [] | [] [RH] [] [] [] | 0.41g (6.3gr.) | 2 frags. | 0° | - |
| The two visible letters on the obverse are probably the AL or AEL in <i>Alfred</i> . (It is unlikely to be a coin of Guthrum on which A occurs either as XEDELIVRE or XEDEL SANRE.) If as seems likely this is of Winchester style in which the ALF form is common, it should be a coin of Beornmær or Byrnhelm, and probably the former since his coins commonly have RH rather than RN at the end of the first line as here. This fragment is not, however, part of the same coin as no. 39 for the positioning of the obverse legend is different. Otherwise A is found only on coins of Ecgwulf, who has his own style of die-cutting, or the occasional Danelaw imitation (cf. no. 28 above). | | | | | | |
| 41. | Moneyer Boga, Dealla, or Goda? | | | | | |
| | EL[] [] | [] [] [] MON
(deposit partly obscures
M and N in photo) | 0.44g (6.8gr.) | 2 frags. | 150° | - |
| Possibly official of the London style and by the moneyer Dealla or Goda, but it could be a coin of the moneyer Boga who uses a different style which is similar to London work. Alternatively, it may be an imitation after these. | | | | | | |
| 42. | Moneyer Dealla, Goda, or Ludig? | | | | | |
| | [] [FR] [] | [] [] [] [] O or
O[] [] [] [] | 0.12g (1.9gr.) | frag. | - | - |
| This has the appearance of regular London-cut dies, and if so it would be by a moneyer with a short name such as Dealla, Goda, or Ludig, followed by MO for <i>moneta</i> . The only known moneyer with a name beginning with O is Oswulf, but this is probably not a coin of his since the four recorded specimens are not of London style and their inner circle is beaded while here it is solid. We cannot rule out the possibility that it is an imitation. | | | | | | |
| 43. | Moneyer Eth... ? | | | | | |
| | + [] [E] | ED[] [] [] [] | 0.15g (2.3gr.) | frag. | - | - |
| The second letter of the reverse appears to have a bar through the upright suggesting it is a Ð. If so the coin will be of one of the four moneyers, Ethelred, Ethelstan, Ethelwine, or Ethelwulf, who all use Canterbury style dies, but whether this is official or imitative it is difficult to tell from such a small piece. It is not a coin of the variety with DORO at the end of the obverse inscription, which was introduced at Canterbury towards the end of Alfred's reign. | | | | | | |
| 44. | Moneyer He...stan? (OE <i>Heahstan</i> or <i>Herestan</i>) | | | | | |
| | [] [ED R+] | HE[] [] [] [] [] | 0.46g (7.1gr.) | frag. | 270° | 1/- |
| Moneyer otherwise unknown in this issue. A Heahstan struck Cross and Lozenge coins for Alfred of Winchester style. This fragment does not appear to be of the Winchester style, but it may be a Danelaw imitation of a coin of that moneyer, as the unusual style and obverse legend suggests. | | | | | | |
| 45. | Moneyer Tilewine? | | | | | |
| | [] [D RE] | [] [] [] [] [] | 0.16g (2.5gr.) | frag. | - | - |
| Probably a coin of the London moneyer Tilewine, but whether it is official or one of the many imitations is difficult to tell from such a small fragment. | | | | | | |

- | | <i>Obverse</i> | <i>Reverse</i> | <i>Weight</i> | <i>Condition</i> | <i>Die-axis</i> | <i>Pecks
obv./rev.</i> |
|--|----------------------------------|--|----------------|------------------|-----------------|----------------------------|
| 46. | Moneyer Tilewine??? | [] [U] [] [] [U] [U] [] or
[] [U] [U] [] | 0.13g (2.0gr.) | frag. | - | - |
| The only element of the reverse legend visible may be the upright stroke of a T, and if so this may perhaps be a coin of the moneyer Tilewine. The identification is most uncertain and the fragment too small to assess its style. | | | | | | |
| 47. | Moneyer . . .ei. ? | [] [R] [E] [] [] [U] [] [U] [U] [U] [] | 0.26g (4.0gr.) | 2 frags | 320° | - |
| No moneyer with EI in this position on the lower line was previously known, but no. 48 has a similar reading. The style has not been recognized. | | | | | | |
| 48. | Moneyer . . .ei. ? | [] [E] [] [] [U] [U] [U] [] | 0.20g (3.1gr.) | 3 frags | - | - |
| See comment on last coin. | | | | | | |
| 49. | Moneyer . . .ulf | [] [F] [R] [] [] [U] [] [U] [U] [U] [] | 0.47g (7.3gr.) | 2 frags | 90° | - |
| The following regular Anglo-Saxon moneyers have names ending in <i>-ulf</i> : Æthelwulf, Cuthwulf, Ealdwulf, Ecgwulf, Heawulf, Herewulf, and Oswulf. The style of this fragment is not particularly close to that of any of these moneyers, although coins of Ecgwulf are very variable in style. | | | | | | |
| 50. | Al[] | [] [U] [U] [U] [U] []
(NE ligatured) | 0.10g (1.5gr.) | frag. | - | - |
| The two letters on the obverse probably represent AL for <i>Alfred</i> and the coin may have been struck from Winchester style dies as in the case of no. 40, or it may be a Danelaw issue as no. 28. The reverse reading is somewhat uncertain. | | | | | | |
| 51. | [] [F] [R] [] | Al[] [U] [U] [U] [U] [] or
[] [U] [U] [U] [U] [] | 0.17g (2.6gr.) | frag. | - | 1/- |
| There are no regular coins commencing with A or ending with V on the reverse except for some of the moneyer Ecgwulf. This small fragment does not appear to be in his style, and it is likely to be a Danelaw issue. | | | | | | |
| 52. | + [] [E] | [] [U] [U] [U] [U] [] or
[] [U] [U] [U] [U] [] | 0.22g (3.4gr.) | frag. | - | -/2 |
| 53. | [] [E] [D] [] | [] [U] [U] [U] [U] [] | 0.09g (1.4gr.) | frag. | - | - |
| The last letter of the reverse appears to be a small C with a pellet at each end of the curve; it does not seem to be part of an S. This cannot be the C of <i>me fec(u)</i> on the coins of Simun since those have a square form, nor that on Elda's coins which has a round C but terminating in wedges rather than pellets. | | | | | | |
| 54. | [] [R] [E] | [] [U] [U] [U] [U] []
(upright for C, E, F etc.) | 0.11g (1.7gr.) | frag. | - | - |
| A further tiny piece, subsequently detached and decayed, showed a top horizontal bar projecting from the upright of the letter on the reverse, showing it to be an E, F, square C or G, or inverted L. | | | | | | |
| 55. | [] [R] [U] [] | [] [U] [U] [U] [U] []
or
[] [U] [U] [U] [U] [] | 0.27g (4.2gr.) | frag. | - | -/1 |
| Distinctive Vs or As with a pellet at the apex of each. Probably a Danelaw issue. | | | | | | |
| 56. | [] [U] []
(for F, L, or R?) | [] [N] [U] [U] [U] []
or
[] [U] [U] [U] [U] [] | 0.11g (1.7gr.) | frag. | - | - |
| The wedge-shaped upright for a letter F, L, or R on the obverse suggests this belongs to the group of Danelaw coins referred to under no. 11 above. With an N in this position this may indeed be a further specimen of the moneyer Simun. | | | | | | |

	<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
57.	| |E| |	| |V| | | or | | | |V| |	0.08g (1.2gr.)	frag.	-	-
58.	| |E| |	| | | |E	0.12g (1.9gr.)	frag., bent	-	-
59.	| |RE	blank, part of outer border	0.13g (2.0gr.)	frag.	-	-
60.	| |F(or E)| |	trace of letter and outer border	0.07g (1.1gr.)	frag.	-	-
61.	part of central cross and inner circle	| |M| | | | |	0.09g (1.4gr.)	frag.	-	2/1
62.	part of central cross	| |L| | | | |	0.10g (1.5gr.)	frag.	-	-/1
63.	central cross	| | | | | | | or | | | | | | |	0.09g (1.4gr.)	frag.	-	-
64.	blank	| | | | | or | | | | |	0.10g (1.5gr.)	frag.	-	-
65.	part of inner circle.	faint letters	0.08g (1.2gr.)	frag.	-	-
66.	part of outer border	| | |	0.06g (0.9gr.)	frag.	-	-
67.	part of inner circle	| |E(or F)| |	0.04g (0.6gr.)	frag.	-	-

IV. CAROLINGIAN ISSUES

*Charles the Bald (840–77)**Gratia Dei Rex* type (864–77, and later)

68.	Mint <i>Curtisasonien</i> (Courcassin?) +GRATIA DEI REX +HICVIRTISASOIIIHH Karolus monogram (HC ligatured, lozenge o)	1.28g (19.8gr.)	3 frags. part missing, bent (once and re-bent)	150°	-
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Ref. Prou⁵⁴ 411; Gariel⁵⁵ pl. 28.94; Morrison and Grunthal⁵⁶ 895; *MEC* 1:860–4. The type was immobilized and so this coin may have been struck after Charles's death. For the suggested mint attribution see *MEC* 1: 635–7.

⁵⁴ M. Prou, *Les monnaies carolingiennes* (Paris, 1896).⁵⁵ E. Gariel, *Les monnaies royales sous la race carolingienne*, 2 vols (Strasbourg, 1883–4).⁵⁶ K. F. Morrison and H. Grunthal, *Carolingian Coinage* (Numismatic Notes and Monographs no. 158; New York, 1967).

	<i>Obverse</i>	<i>Reverse</i>	<i>Weight</i>	<i>Condition</i>	<i>Die-axis</i>	<i>Pecks obv./rev.</i>
69.	Mint <i>Curtisasonien</i> (Courcessin?) +GRATIA II JREI I +HCVRTH IAS I IEN Karolus monogram (HC ligatured) Ref. as last coin.		0.99g (17.7gr.)	6 frags.	320°	2/-
70.	Mint Rouen +GRATIA D-I REI I +ROTVIIACVS CIVI Karolus monogram		1.16g (15.4gr.)	4 frags, part missing, bent (once)	40°	-/1
Ref. Prou 378 var.; Gariel pl. 33.205 var.; Morrison and Grunthal 878; <i>MEC</i> 1:894 var.						

Odo (Eudes) (888-98)

Odo Rex type

71.	Mint Paris +CRATIA D-I REX +PARISI CIVI with ODO REX around a cross Ref. Prou -: Gariel pl. 47.39; Morrison and Grunthal 1284; <i>MEC</i> -. The small flan and light weight of this and the only other published specimen (Berlin, ex Gariel; 1.03g) is notable. A local reduction in standard may have been the result of exigencies such as the need to raise the tribute of 889, but it is unlikely to have been intended to trick the Vikings, since it can be assumed that tributes would normally have been paid by weight. [British Museum]		0.91g (14.0gr.)	whole coin	300°	-/3
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APPENDIX I

Analysis of Soil Samples from the Hoard Site

Dr B. W. Bache

Two samples of soil from the area in which the coins were discovered were analysed in the University of Cambridge's Department of Applied Biology. One sample was apparently taken from close to the base of the hornbeam tree and the other was taken from a spot some 3 metres away from the tree.

The results, which are displayed in the table below, are not remarkable in any way. Although the pH of the sample from under the tree is a little less (i.e. the soil is more acid) than that from further away, neither are very acid. Also the salt concentrations in the 'saturation extract' are not in any way noteworthy.

As the coins were found by the roots of a hornbeam tree, they would have experienced the percolation of a fair amount of soluble organic acids ('fulvic acid' = brown coloured polycarboxylic acids, and probably also low molecular-weight acids such as oxalic acid) over the course of centuries. Even though the pH of these solutions may not be particularly low, the complexing action of the organic acids for metal cations would hasten the decay of the coins.

Determinations on the saturation extract of the soils provided

	<i>Under tree</i>	<i>3m from tree</i>
Electrical conductivity, uS/cm	314	534
pH	4.43	4.94
Chloride, mg/l	30	27
Nitrate-N, mg/l	7	25
Sulphate-S, mg/l	17	16

N.B. The sample from under the tree also contained more organic matter than the other soil sample.

APPENDIX 2

Analysis of Three Coin Fragments from the Ashdon Hoard

Dr Peter Northover

Three coin fragments from the Ashdon hoard (nos 1, 5 and 8 in the catalogue) were submitted for analysis. They were mounted vertically and a flat was ground and polished on the edge of each piece. Analysis was by electron probe microanalysis using the CAMEBAX Instrument in the Department of Materials, University of Oxford. An area 50µm square was analysed at each of three points on the polished area on each fragment, the fragments being placed in the instrument with the polished areas normal to the electron beam. The operating conditions were an accelerating voltage of 25kV and an absorbed current of 30nA. Twelve elements were sought, as indicated in the attached table, where the individual results for the three analysed areas on each sample are presented. The detection limits for most elements are 0.01–0.02%, except for gold where it is 0.04% and zinc where it is 0.03%. With the experimental configuration used here are also problems with the detection of tin in silver; tin was not recorded in any of these analyses and is certainly under 0.05%.

Mean analyses are not presented for any of the coins because of the variable quality of the analyses. Before analysis the coin fragments were seen to be corroded and embrittled; to protect them during mounting and polishing each one was wrapped in lead foil and this proved sufficient to prevent further damage. Examination of the polished area on each fragment both optically and using the back-scattered electron image in the microprobe showed that corrosion had penetrated each to a variable extent. Were the silver alloy much more base it would be easy to correct for this effect because it would be clear that almost all the missing mass was copper and using a combination of the analysis and the microstructure the original copper content could be estimated. Where the silver is of a high alloy standard there is a greater tendency for the silver itself to be corroded, and even electrochemically redeposited back on the surface. Without metallographic evidence it is impossible to estimate whether any missing mass is copper or silver. With this problem in mind we can examine the individual analyses.

No. 1: Alfred/Hereferth: It proved impossible to find a sensible basis for reconstructing the original alloy of this coin, and it is suspected that some redeposited silver might be present; the gold contents are very high and suggest some electrochemical process has enriched the sample area in gold. Normalising the results to 100% gives around 95% silver, 1–2% copper and 2–2.5% gold. It is probable that the original composition approximates to that of no. 8, but perhaps with a lower copper content than that coin.

No. 5: Guthrum/Elda: One analysis square gave a result that was clearly from sound metal; this showed 94.43% silver, 3.97% copper, 1.05% lead and 0.28% gold. There were also significant zinc and bismuth impurities. The second square probably had lost mainly copper and was corrected on that basis to give 94.68% silver and 3.67% copper. Gold had been enriched to 0.66%, a degree of enrichment which can be regarded as typical. The third square was more difficult to correct and it is clear that both silver and copper have been removed; the correction has almost certainly under-estimated the local copper content while the gold has been enriched still further. An estimate can be made that the original alloy contained around 94% silver, 4% or a little more copper, 1% lead and somewhere between 0.3 and 0.5% gold.

No. 8: Danelaw issue in name of 'Alfred' Baldo: Again one analysis square gave results very close to 100% which therefore did not require correction. The composition of the alloy at this point is 92.63% silver, 5.19% copper, 0.86% lead and 0.91% gold. Two other squares required correction on the basis of missing copper and gave results that were very close, albeit with some enrichment in gold. We can suggest that the original alloy was close to 92.5% silver, 5% copper, 1% lead and 0.9% gold, again with zinc and bismuth impurities.

Despite the difficulties of analysis it is clear that all three coins are of a good silver standard of approximately 95–96% 'silver' (Ag+Pb+Au). There appears to be a rather wide range of gold contents and this is consistent with what is known about the alloys of the period.

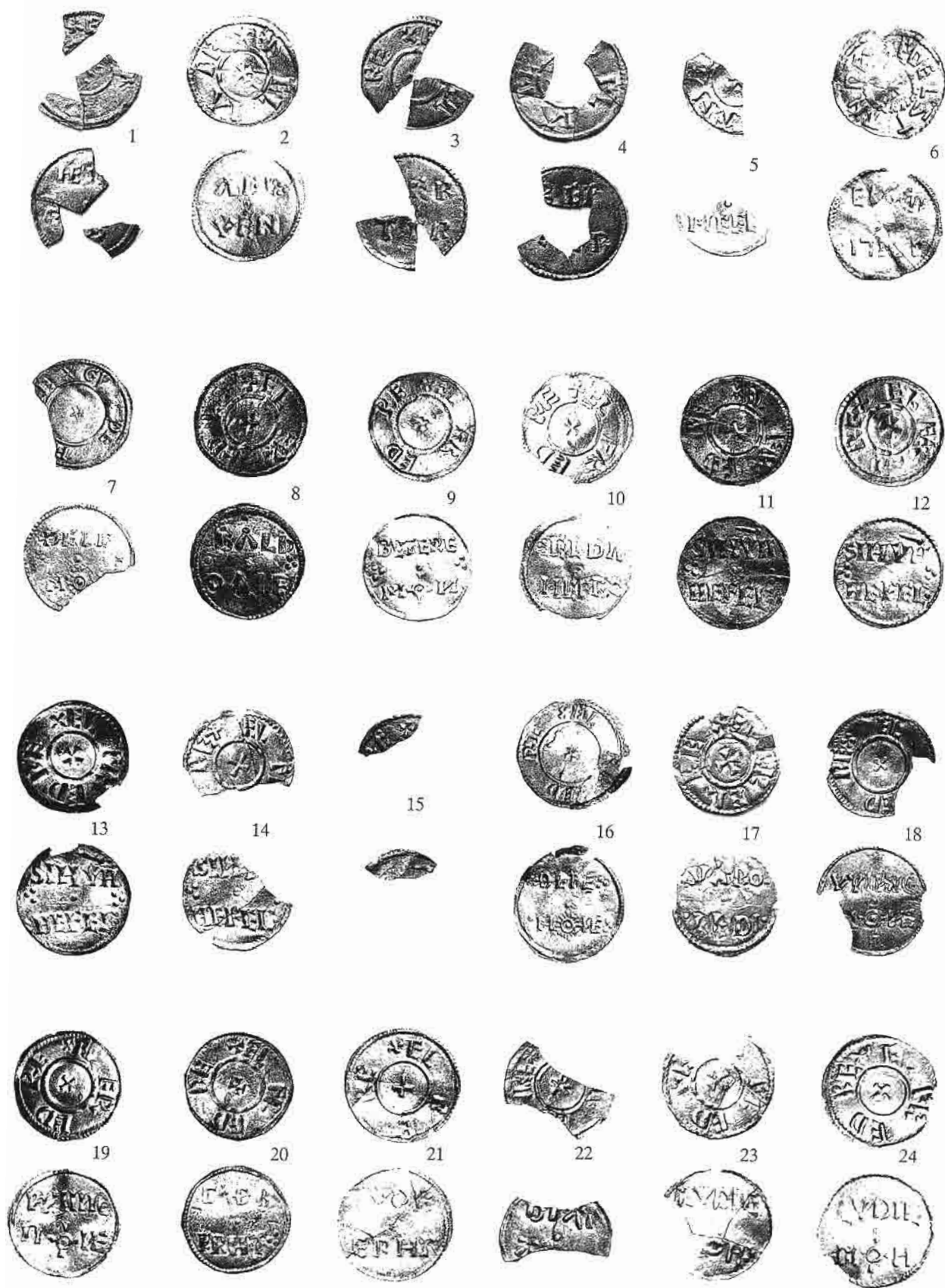
Analysis of three coins from the Ashdon hoard

No. Coin	Fe	Co	Ni	Cu	Zn	As	Sb	Sn	Ag	Bi	Pb	Au
1. Alfred/Hereferth	—	0.02	—	1.11§	0.15	—	—	—	95.71§	0.16	0.37	2.47§
	—	—	—	2.32§	0.09	—	—	—	94.81§	0.03	0.79	1.95§
	—	—	—	1.50§	0.15	—	—	—	95.21§	0.05	0.63	2.36§

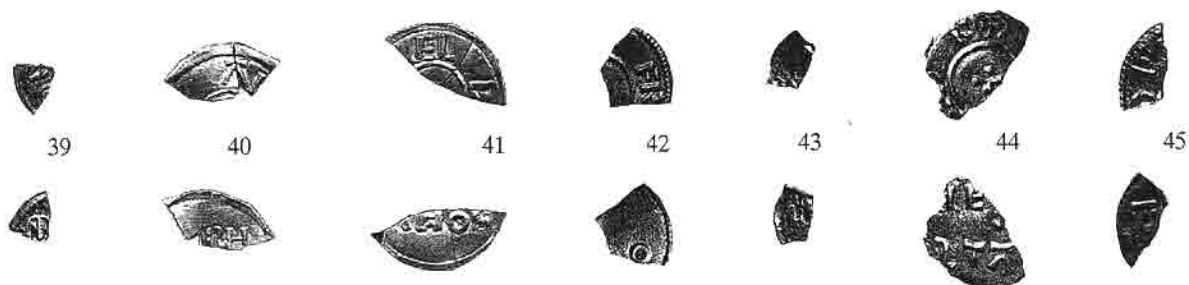
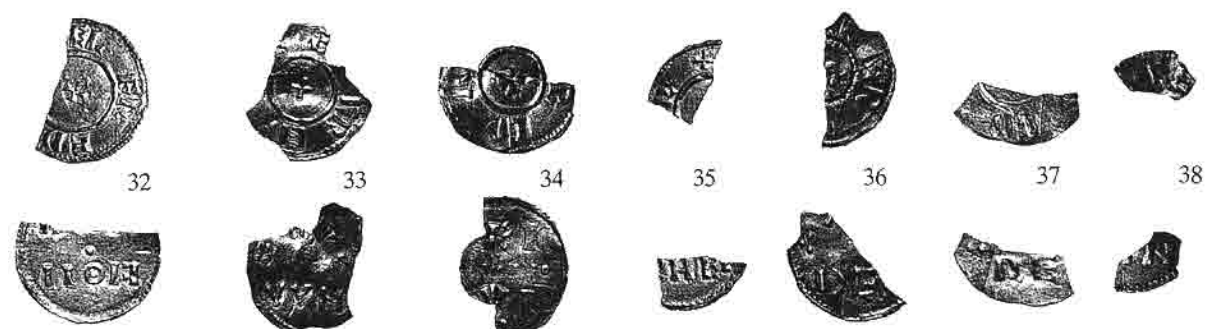
No.Coin	Fe	Co	Ni	Cu	Zn	As	Sb	Sn	Ag	Bi	Pb	Au
5. Guthrum/Elda	0.01	—	—	3.97	0.10	—	—	—	94.43	0.15	1.05	0.28
	0.02	—	0.02	3.67*	0.12	—	—	—	94.68*	0.07	0.77	0.66*
	—	0.03	0.01	2.24*	0.08	—	—	—	96.28*	0.02	0.40	0.93*
8. Alfred/Baldo	0.03	—	—	4.97*	0.36	—	—	—	92.63*	0.02	0.85	1.12*
	—	—	—	5.19	0.39	—	—	—	92.54	0.10	0.86	0.91
	—	0.02	—	5.21*	0.38	—	0.01	—	92.29*	0.07	0.98	1.05*

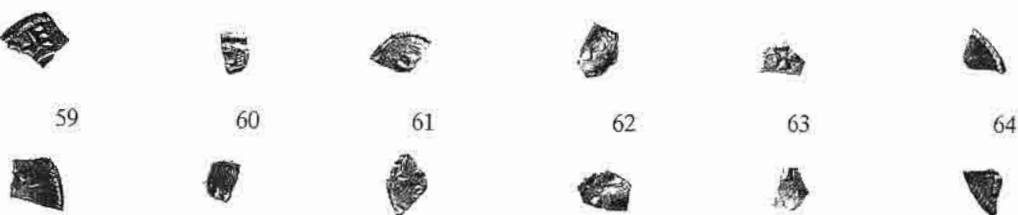
* indicates result corrected by first-order approximation for missing copper: enrichment in gold not corrected.

§ indicates result uncorrected for missing copper normalised to 100wt%.



BLACKBURN: ASHDON HOARD (1)





KING JOHN'S RECOINAGE AND THE CONFERENCE OF MONEYERS IN 1208

IAN STEWART

FOR more than a hundred years differing views have been held about the implications of the writ of October 1207 summoning the moneyers and others concerned with the coinage to appear at Westminster in the following January, and about its relevance to the dating of John's recoinage. In working on the later coinage of John, I have been concerned to establish when the last of the Short Cross classes attributed to his reign, class VI, replaced class V, which covered the recoinage that was introduced in 1204/5. In due course I hope to publish a further part of my paper on the coinage of the subsequent period,¹ and I had intended to include in that some observations about the recoinage and its duration. However, although these considerations remain relevant to the dating of class VI, they may reasonably be regarded as constituting a separate subject; and in view of the work being currently undertaken by others on class V, I feel it might be more useful to set out my ideas about the recoinage now, without waiting for the opportunity to include them in a further instalment of the other paper.

The arrangements for the recoinage of 1205 are known in some detail.² The reform was initiated by a Letter Patent issued on 9 November, 1204 and addressed to every sheriff, which provided that no one was to have clipped money after 13 January, 1205, and laid down various procedures and penalties. Under the terms of a further Letter Patent, of 26 January, old money lacking not more than 2s. 6d. in the pound was permitted to remain current, weights were to be provided by the mint until Whitsun, and coin could only be exchanged at London and Canterbury; deficient coin was to be bored through, presumably pending recoinage. These preparations were followed in the summer by the opening of a number of regional mints and exchanges, and the Pipe Rolls contain extensive material relating to the terms on which they were farmed. The Pipe Rolls each covered one exchequer year, from one Michaelmas to the next, although being compiled later they sometimes refer to receipts or events subsequent to the twelve months that they cover. The first Pipe Roll of John covered the year ended at the first Michaelmas of his reign, and since Richard I died in May 1199, most of it in fact refers to the previous reign. John's second Pipe Roll runs from Michaelmas 1199 to Michaelmas 1200, his third covers Michaelmas 1200/1, and so on. Those of most direct relevance to the recoinage are the seventh, Michaelmas 1204/5, the eighth, 1205/6, and the ninth 1206/7.

Although the records are incomplete, it is clear from the Pipe Rolls that the exchanges attached to the mints were put out to farm during the recoinage. Profits of £378 had been accounted from the exchange of all England for the period from 6 April, 1203 to 13 January, 1205 by Reginald of Cornhill. For the next year, to 13 January, 1206, Reginald and William of Wrotham, who were two of John's most trusted financial agents, took

¹ Stewart I., 'English coinage in the later years of John and the minority of Henry III', *BNJ* 49 (1979), 26-41 and 51 (1981), 91-106.

² *Pipe Roll 7 John*, edited by S. Smith, (1941), pp. xxvii-xxxi. For later years see *Pipe Roll 8 John*, 1205/6, edited by D. M. Stenton (1942), pp. 27, 50-1, 56, 62, 77 and 175; *9 John*, 1206/7, edited by A. M. Kirkus (1946), pp. 33,

39, 50, 87, 165 and 171; *10 John*, 1207/8, edited by D. M. Stenton (1947), pp. 97, 149-50, 158 and 169-70; *11 John*, 1208/9, edited by D. M. Stenton (1949), pp. 29, 30, 134 and 149; *12 John*, 1209/10 edited by C. F. Slade (1951), pp. 10, 47, 86, 139, 154 and 180; and *13 John*, 1210/11, edited by D. M. Stenton (1953), pp. 19, 106, 134 and 154. Most of the later entries are repetitions of accounts outstanding.

charge of the exchange of London and accounted for £710. 16s. 9d.; this was nearly twice as much in twelve months from one exchange as had accrued from London and Canterbury (and possibly others) in the preceding twenty-one months, and is an indication of the scale of the recoinage.

Some idea of the relative importance and expected output of the other mints can be gained from the rents which had to be paid to the Exchequer, through Reginald and William, for the farms of their respective exchanges. The greatest of these was Canterbury, where the exchange relating to the king's and archbishop's coinage was farmed to archbishop Hubert Walter for the year to 13 January, 1206 for 100 marks. However, the archbishop died in July, 1205 and entries in the eighth and ninth Pipe Rolls show that his debt remained unpaid. On his death the whole of the Canterbury exchange, royal and episcopal shares together, was farmed to Reginald and William for 400 marks for the eighteen months to 13 January, 1207; this was a much higher annual rate than the archbishop had been charged and perhaps implies that the volume of recoinage exceeded original expectations.

Canterbury had been an active mint before the recoinage, but in the summer of 1205 there is evidence relating to the opening of mints which for many years had not been active, or only occasionally so. A charter granting the use of a die for coinage was issued on 12 June to the abbot of Bury St Edmunds, where coins had not been struck since the reign of Henry II, and the Pipe Roll records that he duly paid the sum of 500 marks for a variety of privileges including his die and the profits of the exchange at Bury. Contracts were agreed for twelve months from 24 June 1205 in the case of the mints and exchanges of Winchester, the farm of which cost 240 marks and a dole of Auxerre wine, and of Northampton, where four dies and the exchange were charged at 60 marks. Slightly later there is an entry for the important exchange of York which was farmed for 300 marks from 20 July, 1205 for a year. The bishop of Chichester, to whom the king had on 29 April granted the right to a die in the city so long as his own dies were in use there, farmed the profits of the royal dies and of the exchange for a year from 1 August for 30 marks. A debt of 60 marks³ by Reginald of Cornhill is recorded in the seventh Pipe Roll for having the exchange of Oxford for a year, and although dates are not specified this relatively large sum, which was settled in the following year, clearly relates to the farm during the recoinage of 1205 since the mint had been inactive since the recoinage of 1180. Though a number of other mints are known to have been operating during 1205, the Pipe Roll lacks entries relating to the farm of their exchanges.

When the contract for London expired on 13 January, 1206 the exchange, together with that of York, was farmed to Cornhill for £200 until 24 June, 1206, the quarter day on which the Northampton and Winchester farms (and perhaps others unrecorded) ran out. From that day most of the exchanges in England, and from 13 January, 1207, Canterbury, were farmed for 1600 marks, up to 29 September, 1207, to Terricus⁴ of Canterbury who sub-let all except those of London and Canterbury to other farmers. At Carlisle the exchange was farmed for the same period at 30 marks, apparently to Alan FitzAlan, although the name was later corrected to Tomas. The Chichester exchange was farmed from Terricus by one William Toht who owed 10 marks for the period to 29 September, 1207.⁵ Other entries for

³ Smith (p. xxxi) says 40 marks, but the text (p. 117) gives '1x m.' I am grateful to the Keeper of Public Records for confirming that the original roll (E372/51, Rot 10d m2) clearly says '1x m', not 'xlm'.

⁴ Mr. Allen has pointed out to me that this Terricus probably died on 2 June 1208 (W. Urry, *Canterbury under the Angevin Kings*, pp. 12 and 175), and so cannot be identified with 'Terricus le Chaungeor', recorded in 1221/2,

as I had suggested in 'Some German coins overstruck with sterling types', *Lagom*, edited by T. Fischer and P. Ilisch (Münster, 1981), pp. 205-10 (at pp. 209-10).

⁵ The bishop's farm was not due to expire until 1 August 1206 (cf. remarks on York below). Toht's debt remained unpaid in 1209 and 1210 (*Pipe Rolls 11 John* p. 30 and *12 John* p. 86).

the period of the Terricus contract relate to Winchester, where Wrotham was in charge although he appears never to have rendered account, and York where there is some confusion about the arrangements. In spite of the existing farm which was due to have run to 20 July, 1206, the York exchange is coupled with London in connection with Cornhill's payment for the period from 13 January to 24 June, 1206, from which date it was further farmed to William Fairfax under Terricus up to 29 September, 1207 for £100. For the year from 29 September, 1207 Wrotham was supposed to account to the exchequer through Cornhill for the actual profits of all the exchanges in England, but entries in the tenth, eleventh and twelfth Pipe Rolls show that by 1210 they remained unpaid and an account had not even been rendered.

The nature of the conference of moneyers in January, 1208 is itself a matter of dispute, and interpretations of its relationship to the recoinage have depended on views taken about the chronology of the coins. The writ convening the conference was issued by the king on 7 October, 1207, and addressed in similar terms to 'omnibus monetariis et examinadoribus monetae et custodibus cuneorum' of London, Winchester, Exeter, Chichester, Canterbury, Rochester, Ipswich, Norwich, Lynn, Lincoln, York, Carlisle, Northampton, Oxford, Bury St Edmunds and Durham, it charged them, at risk of their persons and their possessions, to seal up all their dies and appear with them at Westminster on 10th January, 1208, bringing with them all mint workers and others 'qui sciunt dare consilium ad faciendum monetam'.⁶

It is to be noted that the participants at the conference were to be not those whose names appear in the Rolls as farmers of the exchanges, but those who served as moneyers (and were named on the coins). Occasionally, however, the offices of moneyer and exchanger or farmer appear to have been vested in the same individuals. For example, in 1206/7 the Ipswich exchange was farmed to Alexander and John Prikehurt, while the names of the moneyers found on coins of the Ipswich mint are Alisandre and Iohan. At Carlisle the moneyer between 1180 and 1205 was Alain and in the 1205 coinage Tomas, the two names that occur in the rolls in connection with the farm of the exchange. The Christian name of each of the farmers of the Chichester mint, Simon FitzRobert (the bishop) and William Toht, is found on coins of Chichester in class V, although whether a bishop when in office at this period would have acted as moneyer in his own mint is open to question.

Longstaffe interpreted the writ of October 1207 convening the conference of moneyers as indicating that the recoinage began in that year, but Evans soon afterwards demonstrated that this should be dated to 1205. Although Grueber revived the view that the conference indicated a new coinage, Brooke restated the evidence for John's recoinage having been initiated in 1205 and suggested that the conference was by way of an inquisition relating to forgery. Lawrence went seriously astray over the dating of his class V, and allocated much too long a period to it. More recently, recognising the need to compress classes V and VI into the time allotted by Lawrence to class V alone, Brand suggested that the 'subtle new characteristics of Vc could have resulted' from the conference of moneyers of January, 1208, that the imposition of the interdict in March, 1208 'may have a bearing on why the provincial mints ceased operations', and that 'the introduction of class VI was probably round about the year 1210'.⁷

Since we are without explicit evidence for the dates when the recoinage mints were closed, it may be instructive to consider the pattern and duration of earlier and later

⁶ The text of the Patent Roll is printed in *NC* 4th ser. 10 (1910), 315.

⁷ Longstaffe, *NC* 2nd ser. 3 (1863), 177. Evans, *NC* 2nd ser. 5 (1865), 285-6; Grueber, *NC* 4th ser. 3 (1903), e.g. 156 and 169-70; Brooke, *NC* 4th ser. 10 (1910), 315-8; Law-

rence *BNJ* 11 (1915), 71 and 75; Brand *BNJ* 33 (1964), 68. In *Pipe Roll 7 John*, p. xxxi, Smith follows Sir Charles Oman, *The Coinage of England*, p. 138, in assuming that the conference of January 1208 meant that the provincial mints were then still working.

recoinages. In 1180, 1248 and 1280 regional mints were opened for the purpose of withdrawing and reminting all the existing currency. In 1300 there was a partial recoinage, directed mainly at eliminating foreign counterfeits from circulation but which probably encompassed also deficient money of English origin; as in 1205, a substantial part of the monetary stock remained in circulation.

In all five cases, the new coin was first produced at London and such few other mints as were operative before the recoinage. Regional mints were then opened in two or more stages, the greater ones before the lesser. In 1180 new mints began to be opened in the summer and the withdrawal of the early coinage of Henry II and its conversion into the Short Cross type was substantially complete by Easter, 1182.⁸ The Long Cross recoinage began at the existing mints of London, Canterbury and Bury in November 1247, the more important regional mints were authorized in February 1248 and the others in the following October. One of the latter, Shrewsbury, was in operation for a year from February, 1249. All the recoinage mints were closed before the end of 1250.⁹ London began the Edwardian recoinage in the second half of 1279, followed by the larger regional mints early in 1280 and by others in the course of the same year. The last of them, Chester, did not open until December 1280, yet all were apparently closed by Michaelmas 1281. For the partial recoinage of 1300, six mints were opened, five of them for periods of six to eight months each and one, Newcastle, from June 1300 until September 1302.¹⁰ In none of these cases, where we know the duration of the recoinage, were any of the provincial mints open for as long as two and a half years. On average, therefore, larger mints seem to have had periods of activity lasting for eighteen months or so during a recoinage, the smaller for a year or less.

From the documentary evidence it is apparent that the London mint, at least, was involved with the new coinage from early in 1205, and that the exchanges to which the regional mints were attached were being farmed at high rents from June onwards. None of these separate farms runs beyond September, 1207, after which the exchange of all England was farmed by Wrotham, as it had been by Cornhill before the recoinage began. From this it may be supposed that all the regional exchanges were closed by September, 1207. A duration of a little over two years, for only a partial recoinage, is, by comparison with other occasions, quite as long as might have been expected.

As in the case of the other recoinages from 1180 to 1300, the larger mints were already active at the time the new coinage of 1204/5 was initiated, or had lately been so. Seven mints, London, Canterbury, Winchester, York, Durham, Lincoln and Norwich are known for all three sub-classes of the recoinage, Va, b and c, and two other mints, Chichester and Exeter, were open early enough to strike Va as well as Vb. In Vb seven further mints appeared, Bury, Ipswich, Northampton, Carlisle, Lynn, Oxford and Rochester; only the first three of these continued into Vc. This is the normal pattern of operation of regional mints in a recoinage, with a lapse of time between the appearance of the earliest and latest, with different dates of closure, but with a concentration of activity for perhaps a year at virtually all the mints at the peak of the operation. This year would have been from the summer of 1205, with the closure of the Vb-only mints probably taking place by the end of 1206, if not earlier, followed during 1207 by the closure of those which continued briefly into Vc. By October, 1207 the regional mints would have been closed and the moneyers

⁸ D. F. Allen in *BMC Henry II*, pp. lxxxviii-xciv; J. D. Brand and F. Elmore Jones, 'The emergency mint of Wilton in 1180', *BNJ* 35 (1966), 116-9; see also J. H. Round's introductions to *Pipe Rolls 26, 27 and 28 Henry II*, 1908-10, pp. xxviii, xxi-ii, and xxiii respectively.

⁹ *BNJ* 9 (1912), 157; various references are given by J. D. Brand, 'The Shrewsbury Mint, 1249-50', *Mints, Dies and Currency*, edited by R. A. G. Carson (London, 1971), pp. 129-50.

¹⁰ *BNJ* 7 (1910), 124-5 and 9 (1912), 183.

would therefore have been able to seal up their dies to be taken to Westminster in January, 1208 without interrupting the recoinage.

The likelihood that the provincial mints had been closed, and the recoinage thus effectively completed, by the time that Wrotham resumed the farm of the exchange of all England (the pre-recoinage formula) from Michaelmas 1207, appears to receive confirmation from the Lincoln mint. At some point in the twelve months from 13 January, 1205 Wrotham apparently sent £100 from London to Lincoln¹¹ as an opening float for the exchange there, and this sum is recorded in the twelfth Pipe Roll (1209/10) as having been repaid together with the net profit, amounting to £110, of its operation during the seventh and eighth years of the reign.¹² More precise dates are not available for the activity of this mint. But since John's regnal years ran from one Ascension Day to the next, the period during which the Lincoln exchange was open would have fallen between May 1205 and May 1207. On this basis Vc would probably have followed Vb early in 1207 or even perhaps towards the end of 1206.

In his paper on the dies of class V, Mr. Allen has provided detailed information about the varieties of the class that were struck at each of the mints participating in the recoinage, and this enables us to check the numismatic detail against the documentary evidence.¹³ He defines two divisions of the early sub-class Va, the first of which (Vai), with various exceptional features, was produced only at London and Canterbury, the two most active mints of class IV and possibly the only two which were operating immediately before the recoinage.¹⁴ Coins of class Vai are very rare and it was quickly followed by the much less rare Vail, on which the cross pommée became standard and dies of which were sent to seven other mints. All the mints received dies of class Vb, the main recoinage issue, and several of them received dies of Vc, during which the recoinage came to an end. A general idea of the periods of activity of the several mints can be gained from considering the main sub-classes struck by each of them, and further sub-division of Vb enables a more detailed picture to be drawn. The main varieties are Vbi, with flat-topped R, and Vbii, with round-topped R, which are sequential. A third variety, Vbiii, with defective eyes, falls within the period of Vbii, perhaps towards its later stages but not running to the end of Vb, so its chronological value is doubtful. The table below shows the number of obverse dies recorded by Allen of each mint and variety.

Combining this information with the documentary evidence we can make some attempt to work out a more detailed chronology of the sub-classes. We do not know when coins that we describe as of class Va were first struck. The assize of 26 January, 1205 provided that any pennies minted after Christmas 1204 and found clipped were to be bored through and the possessor attached as thief, which suggests that they may have been distinctive, perhaps by virtue of bearing the cross pommée mark of Vail. If this was so, the ten London and four Canterbury obverse dies of Class Vai might be attributable to the period between the announcement of the reform on 9 November and Christmas 1204.¹⁵ The first batch of additional mints opened in the summer of 1205. Durham, Exeter, Lincoln, Norwich, Winchester and York all received obverse dies of Vail. No Va dies went to the abbot of

¹¹ There is an entry, without dates, referring to a float of £100 for the exchange of Lincoln (*Close Roll*), or London (*Pipe Roll*, p. 11); probably the former (see Smith's comment in *Pipe Roll 7 John*, p. xxxi, n.6).

¹² *Pipe Roll 12 John*, p. 10.

¹³ M. R. Allen 'The provision and use of Short Cross class V dies' below, pp. 46-76. I wish to thank Mr. Allen for making this information available to me before publication, and for many helpful comments on the present paper.

¹⁴ Northampton and York struck IVc, the last sub-class

before class V, and might have been minting as late as 1204, but if so probably only on a small scale.

¹⁵ It is conceivable that the improved workmanship of Vai replaced the comparatively uncouth IVc before the reform, but it is more natural to see a connection between the two developments, especially since Vai includes the sort of experimental dies that are often associated with a new coinage (cf. Stewart, 'Style in medieval coinage', *NC* 7th ser. 9 (1969), 269-89, at p. 287).

No. of obverse dies recorded of class V.

	<i>Total</i>	<i>Vai</i>	<i>Vaii</i>	<i>Vbi</i>	<i>Vbii</i>	<i>Vbiii</i>	<i>Vc</i>
London	366	10	22	46	91	23	174
Canterbury	205	4	20	42	69	30	40
Durham	17		2	2	6		7
Exeter	18		3	3	9	3	
Lincoln	25		4	3	6	6	6
Norwich	20		2	3	9	3	3
Winchester	78		4	16	45	4	9
York	24		4	7	12		1
Chichester	20		(bi/aii)	6	11	3	
Bury	6			1	4		1
Carlisle	4			1	3		
Ipswich	23			7	10	2	4
Lynn	15			3	7	5	
Northampton	17			6	9	1	1
Oxford	9			3	4	2	
Rochester	12			1	11		
Total	859	14	61	150	306	82	246

Source: M. R. Allen (see n. 13 above).

Bury St. Edmunds, who was granted the use of a die on 12 June, 1205, nor to Northampton, the mint and exchange of which was farmed from 24 June. The bishop of Chichester was granted the right to his die on 29 April and the farm of the king's dies and the exchange ran from 1 August. Each moneyer at Chichester received one reverse die of *Vaii* but no *Va* obverse dies went to this mint. It therefore looks as if the distribution of *Va* dies ended and that of *Vbi* dies began about June or July, 1205.

The bulk of the recoinage was produced from dies of *Vb*. Of four minor mints, Carlisle, Lynn, Oxford and Rochester, this is the only sub-class known. Carlisle and Rochester are recorded only in *Vbi* and *Vbii*, and not in *Vbiii*, which could mean that their period of activity ended well before the end of *Vb*; but that is not necessarily the case, since Bury, Durham and York used dies of *Vbii* and *Vc* but none of *Vbiii*. Allen has counted 538 obverse dies of *Vb* against 75 of *Va*, and it seems likely that *Vb* dies were in issue and use for well over a year. In addition to the four mints known only of *Vb*, two mints that had received dies of *Vaii*, Exeter and Chichester, are unknown in *Vc* and presumably closed at or before the end of *Vb*. Apart from London, which certainly, and Canterbury and Durham which probably continued in operation after the end of the recoinage, there were seven mints which survived into class *Vc*, Lincoln, Norwich, Winchester and York, which had been active since *Vaii*, and Bury, Ipswich and Northampton which had opened with dies of *Vbi*.

Taking all the evidence together, I do not think the conference of moneyers held at Westminster in January 1208 could have fallen within the period of the recoinage. Indeed, for what was not a total recoinage it would be very surprising if the provincial mints had been active for thirty months or more. The timing of the conference and the instructions sent out suggest that it is more likely to have been an occasion for a general debriefing on the recoinage, at which dies could be returned and checked off, reports made on practical and financial aspects of the recoinage and any outstanding matters resolved. The only mints which would have resumed coinage (of *Vc*) after the conference would have been London, Canterbury and Durham. I do not follow Brand in believing that the papal interdict of March 1208 was relevant to the closure of the provincial mints, but I do think it

is possible that it led to the closure of Canterbury. I have argued elsewhere that there was a substantial interruption to minting at Canterbury between the end of the recoinage and the last years of John's reign.¹⁶ No Canterbury coins are known of class VIa, and the proportion of Vc:Vb obverse dies recorded¹⁷ at Canterbury (40:141) is so much lower than at London (174:160) that Canterbury may have ceased minting Vc long before London did. The closure of the mint at Canterbury from some point after the end of the recoinage, during the course of Vc, until some time after the beginning of class VIb could be explained as the consequence of the king's action following the interdict. John eventually came to terms with Innocent III in May 1213. Reginald of Cornhill, who was keeper of the exchange in 1213/4, accounted for profits at London from soon after the beginning of the exchequer year (20 November) but for those at Canterbury only from 9 March 1214.¹⁸ If the revival of minting at Canterbury was a (slightly delayed) consequence of the restoration of the archbishop's temporalities, this would lend support to the idea that its suspension was a consequence of the interdict of 1208.¹⁹

We have no means of knowing exactly when VIa replaced Vc at London (and Durham), but the very large number of London Vc dies counted by Allen suggests it cannot have been before 1208. Perhaps c.1209/10 is the best date we can offer on present evidence for the end of Vc and the start of class VI.

¹⁶ *BNJ* 51 (1981), 93.

¹⁷ Even if the numbers of dies recorded are not accurate indicators of the numbers used, the difference between the figures for Canterbury and London is so marked that it seems likely to be of significance.

¹⁸ *Pipe Roll 16 John*, edited by P. M. Barnes (1962), pp. 37-8.

¹⁹ In the Pipe Roll for 1210/11 (*Pipe Roll 13 John*, p. 242), there is an entry which could be read as suggesting that, while the Canterbury mint was closed, an exchange was established down river at Sandwich. Immediately following an account for export duty at Sandwich ('de lastagio de Sandwiz') there is a reference to Hugo Bardulf who 'habuit de pecunia cambii'.

THE PROVISION AND USE OF SHORT CROSS CLASS V DIES

MARTIN R. ALLEN

Introduction

WHEN L. A. Lawrence introduced his classification of the Short Cross coinage he associated class V with King John's partial recoinage.¹ John Brand has considerably increased our understanding of mint organisation during the partial recoinage by producing die-studies of class V coins struck at Bury St Edmunds, Exeter, Ipswich, Lynn, Northampton, Norwich, Oxford and Rochester.² This article will reconsider the dies used at the mints studied by Brand and offer important evidence from the other mints of class V. New information that is essential for a full discussion of the production of class V has been very generously contributed by Dr Robin Eaglen, Mr Glenn Gittoes and Mrs Yvonne Harvey. Dr Eaglen has provided access to the research compiled for his PhD thesis on the Bury St Edmunds mint³ and Mr Gittoes has supplied information derived from his unpublished study of the Short Cross coins of Oxford. Mrs Harvey has allowed the use of the results of her study of the Short Cross coins of Winchester, produced in collaboration with Mr Gittoes, in advance of the publication of a forthcoming *Winchester Studies* volume. I have produced new die-studies of the mints not examined by Dr Eaglen, Mr Gittoes or Mrs Harvey. H. R. Mossop's pioneering study of the Lincoln mint included Short Cross class V⁴ but a fresh die-study of Lincoln coins has been necessary.⁵

The classification used in the die-studies is tabulated in appendix 1. Appendix 2 is a table of the numbers of coins studied and the numbers of dies found are recorded in appendices 3, 4 and 5.⁶ Appendix 7 provides diagrams representing dies used at all of the mints studied except Canterbury, London and Winchester. The Carlisle and Durham diagrams have been adapted from diagrams in my published study of the Short Cross issues of those mints, incorporating five Carlisle coins and 16 Durham coins that were not available for study at the time of the original publication.⁷ Dies have been arranged on the diagrams in numbered sequences based upon their classification, the evidence of die-links and subjective assessments of the style of the portraits on the obverse dies. These sequences may not reflect the order in which dies were actually produced or used, and examples of

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¹ L. A. Lawrence, 'The Short-Cross coinage, 1180 to 1247', *BNJ* 11 (1915), 59–100, at pp. 70, 78 and 82. I have used Lawrence's classification, with modifications introduced below (p. 62), and by J. D. Brand, 'Some Short Cross questions', *BNJ* 33 (1964), 57–69, at pp. 58, 59, 64 and 65, and *SCBI* 21, *Coins in Yorkshire collections* (London, 1975), p. lvi.

² J. D. Brand, 'Some Short Cross questions', pp. 61–65.

³ R. J. Eaglen, 'The mint of Bury St. Edmunds to 1279' (Birkbeck College, University of London, 1989).

⁴ H. R. Mossop et al., *The Lincoln mint c.890–1279*

(Newcastle upon Tyne, 1970), pl. 94, 28–pl. 97, 21, pl. 102, 5.

⁵ Mossop identified 30 obverse dies and 52 reverse dies from 159 coins of class V but 217 coins in the new study were produced from only 25 obverse dies and 50 reverse dies.

⁶ The most common versions of moneyers' names have been preferred in the appendices but alternative versions that seem to be substantive have been included. It is particularly notable that the names Andre, Gilebert, Milis, Peres and Renald, which appear on dies attributed to class Va in this article, were permanently modified to Andreu, Gileberd, Miles, Pieres and Renaud respectively on later dies. In the key to the plates only the version appearing on the illustrated coin is given.

⁷ M. R. Allen, 'The Carlisle and Durham mints in the Short Cross period', *BNJ* 49 (1979), 42–55, at pp. 49, 51 and 52. The previously unpublished coins are all from die-combinations published in 1979.

the simultaneous supply of groups of dies will be discussed. Reverse dies are indicated by numbers with prefixes derived from the name of the moneyer on all of the diagrams except the Carlisle and Durham diagrams, which employ the numbering used in the original publication. The numbering used in Brand's Norwich die diagram⁸ has also been retained, with the addition of four obverse dies and eight reverse dies and the omission of one obverse die.⁹ The numbers of coins providing evidence for die-combinations are recorded against the lines connecting combined dies.¹⁰

It has not been possible to illustrate coins from all of the dies included in the studies. However, copies of photographs of coins from the Bury St Edmunds, Chichester, Exeter, Ipswich, Lincoln, Lynn, Northampton, Norwich, Oxford, Rochester and York dies have been deposited in the Department of Coins and Medals at the British Museum, the Library of the British Numismatic Society, the Heberden Coin Room of the Ashmolean Museum and in the Fitzwilliam Museum. The Carlisle and Durham dies have already been illustrated.¹¹

The evidence provided by the exceptional numbers of dies found in the studies of Canterbury, London and Winchester coins has been reduced to a manageable form in appendices 4, 5 and 6. Appendices 4 and 5 tabulate the die survival frequencies, which are the numbers of dies known from specified numbers of coins. The table of links between obverse dies in appendix 6 has been produced by counting each permutation of two obverse dies used with a common reverse die as a separate link. For example, if a reverse die has been found in combination with four obverse dies there are six permutations of two obverse dies and six links been counted. The tables of links between reverse dies, which include links between reverse dies of the same moneyer, have been similarly produced. Thus, the first column in the table of links between Canterbury reverse dies records three links involving pairs of dies of the moneyer (H)ernaud/Arnaud/Arnold, 11 links between a die of that moneyer and a die of Coldwine, and so on.

Die-links between class IVc and class Va

Lawrence considered that there was a fundamental discontinuity of style and workmanship between the 'very bad' coins of class IV and the 'very good' coins of class Va.¹² However, reverse dies of the Canterbury moneyers Coldwine¹³ and Roberd used with class Va obverse dies were also used with obverse dies of class IVc (pl. 3, 1–4). The portraits on the obverse dies involved in these die-combinations show the change from the class IV beard composed of pellets¹⁴ to the beard of 'fine strokes' specified by Lawrence as a characteristic of class V.¹⁵

⁸ J. D. Brand, 'Some Short Cross questions', p. 63.

⁹ The evidence for the existence of obverse die 3 seems to have been a coin in the Fitzwilliam Museum described as a class Vb/class Va 'mule' in an unpublished list (J. D. Brand, 'Short Cross coins in the Fitzwilliam Museum Cambridge' (Rochester, 1963), coin no. 216). This coin is an indistinct product of obverse die 2.

¹⁰ The Sudbourne hoard is probably the principal source of the exceptional numbers of coins from two class Vc obverse dies combined with reverse dies of the Ipswich moneyer Iohan. A parcel of 49 coins from this hoard published by R. H. M. Dolley, 'A note on the chronology of some published and unpublished 'Short Cross' finds from the British Isles', *BNJ* 29 (1958–1959), 297–321, at pp. 307–311, contained 16 class Vc pennies of Iohan.

¹¹ Allen, pl. 7, 46–49, pl. 8, 50–55 and 68–77, pl. 9, 78–95.

¹² Lawrence, pp. 64 and 70.

¹³ The moneyer Coldwine named by this reverse die and other reverse dies used with class V obverse dies can be

identified with the moneyer Goldwine named by Canterbury coins of earlier classes. Class IV coins from two reverse dies of Goldwine illustrated by G. C. Brooke, *NC* 4th ser. 10 (1910), pl. 8, 1 and 2 have London mint-signatures and Mr Gittos has a class IVb penny from a third London reverse die of this moneyer. However, the first die illustrated by Brooke is linked to reverse dies of the Canterbury moneyers Reinald/Reinaud, Samuel and Simon/Simun and the die not published by Brooke is linked to a die of the Canterbury moneyer Ulard. These die-links, which will be illustrated in another publication, may indicate that all of the 'London' reverse dies of Goldwine were supplied for use in Canterbury. It can be assumed that the reverse die of Coldwine was supplied to Canterbury although it does not have a mint-signature.

¹⁴ J. D. Brand, 'Some Short Cross questions', p. 59, allocates coins with a beard of pellets to class IV.

¹⁵ Lawrence, p. 64.

Class Vai obverse dies

Lawrence noted that in class V the curls representing the portrait's hair 'generally' contained pellets.¹⁶ The two die-linked class Va obverse dies and 12 other class V dies share with dies of class IVc and previous varieties a complete absence of pellets inside the curls.¹⁷ All of the die-combinations involving these class V dies are illustrated (pl. 3, 2, 4–20, 23, 24, 27 and 28). Five of the dies, including the linked dies, have distinctive large annulet eyes comparable with those often found in class IVc (pl. 3, 2 and 4–11). Three of the dies having smaller eyes similar to those usually found in class Va (pl. 3, 20, 24, 27 and 28) are die-linked with apparently normal class Va obverse dies (pl. 3, 21, 22, 25 and 26), confirming their official origin. Eleven of the dies have the reversed S of class IVc and class Va (pl. 3, 2, 4, 5, 8–17, 23, 24, 27 and 28), and the other three (pl. 3, 6, 7 and 18–20) have a normal S in combination with the single stop before REX that was considered by Lawrence to be an early feature of class V, reviving the punctuation of class I.¹⁸ All of the dies may be plausibly assigned to an early place in class Va – although those with a normal S would have been attributed to class Vb by Lawrence¹⁹ – and they can be described as class Vai. The diverse and unusual portraits on the class Vai dies, the apparently unique appearance of the sceptre to the right of the portrait on one of them (pl. 3, 6 and 7) and the aberrant legends on two of the dies (pl. 3, 6, 7 and 17) seem to be examples of the variations sometimes found at the start of a reform of the coinage.²⁰ It is possible that the production of these dies was followed without an overlap by the production of class Va obverse dies not attributable to class Vai, but this cannot be proved.

Class Vai reverse dies

Class Vai obverse dies have been recorded in combination with six Canterbury reverse dies (pl. 3, 1–5 and 18–22) and 16 London reverse dies (pl. 3, 6–17 and 23–28). Three of the Canterbury reverse dies (pl. 3, 18–22) and four of the London reverse dies (pl. 3, 23–28) have the cross pommée initial mark of Lawrence's class Va but the remaining 15 dies (pl. 3, 1–17) have the cross pattée initial mark conventionally associated with class IVc and class Vb. The cross pattée initial mark dies should not be attributed to class Vb. The cross pattée die of the Canterbury moneyer Samuel (pl. 3, 5) has the reversed S, which is not found on dies of class Vb and subsequent varieties, and the dies of Coldwine and Roberd (pl. 3, 1–4) have provided the die-links with class IVc. The cross pattée reverse dies and the class Vai obverse dies used with them have lettering that resembles the lettering on some class IVc obverse dies, such as the illustrated dies. The cross pattée dies, which can be attributed to class Vai, were probably produced before the introduction of the cross pommée initial mark.

Class Vai reverse dies do not have any characteristics that would allow them to be distinguished from reverse dies exclusively known from coins of class IVc. The barred letter A found on four class Vai reverse dies (pl. 3, 3, 4, 10, 15 and 16) was noted by Lawrence as a novel characteristic of some coins of class Va,²¹ but a reverse die of the Canterbury moneyer Iohan and three reverse dies of the York moneyer Davi used with class IVc obverse dies also have barred forms of this letter. It is possible that some of the class Vai reverse dies were made during the production of class IVc obverse dies.

¹⁶ Lawrence, p. 64.

¹⁷ Classes I, II, III and IV are generally characterised by curls without pellets although some coins of classes III and IVa have a pellet in at least one of the curls.

¹⁸ Lawrence, p. 64.

¹⁹ The forms of the normal letter S on these dies are

smaller than the forms usually found in Lawrence's class Vb.

²⁰ I. Stewart, 'Style in medieval coinage', *NC* 7th ser. 9 (1969), 269–289, at p. 287 uses class Va as an example of the early experimental stage of a reformed coinage.

²¹ Lawrence, p. 78.

Class Vaii obverse dies

Class Va obverse dies that have pellets in some or all of the curls of the portrait's hair can be attributed to class Vaii. The opening of the additional mints required for the partial recoinage began during the supply of class Vaii obverse dies. Six of the mints that received class Vaii obverse dies did not use class Vai dies. At least three of these mints (Exeter, Lincoln and Winchester) did not produce coins of class IVb or class IVc, indicating that they were closed before the introduction of class Vai.

The 61 class Vaii obverse dies recorded have been divided into three groups, which might possibly represent three periods of die production. The allocation of dies to groups has principally depended upon subjective assessments of the style of portraits, and all of the dies have been illustrated to aid the understanding of these assessments.

Group A obverse dies (**pl. 3, 25 and 26, pl. 4, 29 and 54–56, pl. 5, 57 and 77**) can be usefully compared with three of the class Vai obverse dies used with cross pommée reverse dies (**pl. 3, 18–20, 27 and 28**). The portraits are comparatively small, with the face positioned well above the collar, and the curls are often relatively small. The four class Vaii dies (**pl. 3, 25 and 26, pl. 4, 29, 54 and 55**) that have the stop before REX also found on three class Vai dies can be assigned to group A. The most unusual of the group A dies (**pl. 5, 77**), which seems to represent an attempt to reproduce the slightly turned view of the head often suggested by class I portraits, may be the earliest class V obverse die used at Winchester. One group A obverse die (**pl. 4, 29**) was used with Canterbury reverse dies and five group A dies (**pl. 3, 25 and 26, pl. 4, 54–56, pl. 5, 57**) were combined with London reverse dies.

The 34 class Vaii obverse dies placed in group B (**pl. 3, 21 and 22, pl. 4, 30–38 and 47–53, pl. 5, 58–63, 75, 76, 78, 79 and 81–84**, *BNJ* 49 (1979), pl. 8, 68–71) have relatively broad, rounded portraits that are unlike any of the class Vai portraits. Group B includes all of the class Va obverse dies used with Durham, Exeter, Lincoln, Norwich and York reverse dies. Group B dies were also combined with reverse dies of all of the Canterbury and London moneyers known from coins with class Va reverses, who are listed in table 2 (p. 50), and with reverse dies of the Winchester moneyers Adam, Henri and Milis/Miles.

Twenty class Vaii obverse dies (**pl. 4, 39–46, pl. 5, 64–74 and 80**), allocated to group C, have relatively elongated portraits resembling portraits on class Vbi obverse dies. A group C die (**pl. 5, 71**) used with class Vb reverse dies of the London moneyers Renar, Ricard, Ricard T and Wille(l)m B is the only class Va obverse die that is known to have been combined with class Vb reverse dies of Canterbury, London or Winchester moneyers. Group C dies were used with reverse dies of all of the Canterbury and London moneyers listed in table 2 and with dies of the Winchester moneyers Iohan and Ricard. A table of the numbers of class Vaii obverse dies found emphasises the difference between the supply of dies to Canterbury, London and Winchester and the supply to the other mints.

TABLE I

Class Vaii obverse dies

<i>Mint</i>	<i>Group A</i>	<i>Group B</i>	<i>Group C</i>	<i>Totals</i>
Canterbury	1	11	8	20
Durham	0	2	0	2
Exeter	0	3	0	3
Lincoln	0	4	0	4
London	5	6	11	22
Norwich	0	2	0	2
Winchester	1	2	1	4
York	0	4	0	4
Totals	7	34	20	61

The die diagrams for the Durham, Exeter, Lincoln, Norwich and York mints show consistent patterns clearly indicating that all of the class *Vaii* obverse dies provided for these mints have been found. One group B die was supplied for each of the moneyers at Exeter, Lincoln and Norwich but the Durham and York moneyers seem to have been allocated two group B dies each.

All of the class *Vaii* obverse dies supplied to Winchester may have been found although the four dies known were combined with a total of five reverse dies naming five different moneyers. The class *Vaii* coins of Henri are the only evidence for the activity of this moneyer during the production of class V and it is probable that he was replaced by one of the other moneyers named.

Class Vaii reverse dies

Reverse dies with the cross pommée initial mark of Lawrence's class Va can be attributed to class *Vaii* to distinguish them from the cross pattée initial mark reverse dies of class *Vai*. The use of class *Vaii* reverse dies with five class *Vai* obverse dies might indicate that the cross pommée initial mark was introduced during the production of class *Vai* obverse dies, but it is possible that the five obverse dies were contemporary with class *Vai* reverse dies.

The Durham, Lincoln, Norwich and York moneyers evidently received two class *Vaii* reverse dies each. One class *Vaii* reverse die seems to have been provided for each of the moneyers active at Chichester and Exeter. The Winchester moneyers Adam, Henri, Iohan, Milis/Miles and Ricard also apparently received initial supplies of one class *Vaii* reverse die each, used with class *Vaii* obverse dies. However, two additional class *Vaii* reverse dies with the name of Iohan were used with class *Vbi* obverse dies. These two extra dies of Iohan and the class *Vaii* reverse dies used at Chichester were probably produced after the reappearance of the normal letter S on obverse dies attributable to class *Vbi*.²² A table of the Canterbury and London class *Vaii* reverse dies recorded shows that approximately one third of these dies have been found in combination with class *Vbi* obverse dies only.

TABLE 2

Class Vaii reverse dies

<i>Mint and moneyer</i>	<i>Total no. of Vaii rev. dies</i>	<i>Combined with Va obv. die(s)</i>	<i>Combined with Vaii and Vbi obv. dies</i>	<i>Combined with Vbi obv. die(s)</i>
Canterbury				
(H)ernaud/ Arnaud/Arnold	8	6	0	2
Coldwine	7	5	0	2
Hue	7	5	0	2
Iohan	13	8	0	5
Roberd	5	3	0	2
Samuel	5	4	1	0
Simon/Simun	7	5	0	2
London				
Fulke/Folke	18	4	5	9
Henri(k)	21	17	0	4
Ricard	18	12	1	5
Wille(l)m	28	16	1	11
Totals	137	85	8	44

²² The class *Vaii* reverse die of the Chichester moneyer Simon and three class *Vaii* reverse dies of the Canterbury moneyer Simon/Simun have the normal letter S. Twelve class *Vaii* reverse dies have the reversed form of the letter.

Class Vbi obverse dies and associated reverse dies

The division of class Vb into class Vbi, characterised by 'flat-topped' forms of the letters K and R, and class Vbii, which has 'round-topped' forms of those letters, was originally supported by the observation that coins of class Va had flat-topped forms.²³ All of the class Vb obverse dies known to have been used with class Vaii reverse dies can be attributed to class Vbi, confirming the chronological significance of the flat-topped letter R found on them.

The Lincoln moneyer Ricard seems to have continued to use his class Vaii reverse dies after the supply of class Vbi obverse dies and class Vb reverse dies for the use of his fellow moneyers Andre(u), Rauf and Tomas. Single class Vaii obverse dies were retained at Durham, Lincoln, Norwich and York after the receipt of class Vbi dies. However, the three Exeter moneyers seem to have collectively surrendered all of their class Vaii dies when class Vbi dies were provided.

All of the mints having two or more moneyers using class Vbi obverse dies, with the exception of Chichester, have provided evidence of the sharing of obverse dies by moneyers noted by Brand.²⁴ At Chichester each moneyer seems to have had one obverse die for his exclusive use which had to be surrendered, with any associated reverse dies, when a new set of dies was issued. A similar system may have been frequently applied to the use of dies at Northampton, although one class Vbi obverse die was used with reverse dies of both of the moneyers supplied with class Vbi reverse dies.

It is probable that dies were often supplied in pairs when production of class Vbi dies started and that this system was generally superseded by the supply of two reverse dies with each class Vbi obverse die. The class Vbi/class Vaii coins of Winchester studied were produced from two obverse dies and two reverse dies. The Carlisle, Chichester and Lynn moneyers all seem to have received class Vbi obverse dies and their associated reverse dies in pairs. Three reverse dies of the Ipswich moneyer Alisandr(e)/Alisandar (al-a3)²⁵ have been found combined with a total of five class Vbi obverse dies but these dies might have been part of five or six pairs of dies if associated reverse dies were provided for the moneyer Iohan. However, the two class Vbi obverse dies directly or indirectly die-linked with one of the class Vbii obverse dies supplied to Ipswich may have been accompanied by two reverse dies for Alisandr(e)/Alisandar and two dies with the name of Iohan. A change from the supply of dies in pairs to their supply in sets of one obverse die and two reverse dies per moneyer might also have occurred during the provision of class Vbi dies for the Northampton moneyers Adam and Roberd. Each of the Exeter, Lincoln, Norwich, and Oxford moneyers seems to have been allocated one class Vbi obverse die with two reverse dies.

Dies were not always supplied in pairs or sets of three during the provision of class Vbi dies. The four class Vbi reverse dies of the Bury St Edmunds moneyer Fulke/Folke have been found combined with only one obverse die. If it is supposed that one of the class Vbi obverse dies supplied to York has not yet been found it is evident that the Durham and York moneyers each received two class Vbi obverse dies with two reverse dies, continuing a system used for the supply of class Vaii dies to them.

Class Vbi coins of Winchester name the new moneyers Andreu and Lukas in addition to

²³ J. D. Brand, 'Some Short Cross questions', p. 65. The letter R on class Vaii dies varies considerably from the normal flat-topped form (eg. pl. 3, 7) to a letter that could not be said to be flat-topped (eg. on the reverse of pl. 3, 9).

²⁴ J. D. Brand, 'Some Short Cross questions', p. 64.

²⁵ The mint-signature on these three reverse dies is C but on other Ipswich reverse dies it always commences with a G.

This seems to be an example of the substitution of C for G also shown by the change in the initial letter of the name of the Canterbury moneyer Goldwine/Coldwine and it does not indicate the existence of an otherwise unknown Canterbury moneyer. None of the three reverse dies are die-linked with Canterbury reverse dies.

the previously established moneyers Adam, Iohan, Milis/Miles and Ricard. The seven Canterbury moneyers and three of the four London moneyers named by class V*aii* reverse dies are also known from coins of class V*bi*. The London moneyer Henri(k) used four of his class V*aii* reverse dies with class V*bi* obverse dies but his name does not appear on a class V*b* reverse die in the study. The new London moneyers Adam, Beneit, Ilg(i)er, Rener, Ricard B, Ricard T, Wille(l)m B, Wille(l)m L and Wille(l)m T also used class V*bi* obverse dies.

Mr Gittoes has used die-links to show that the class V*bi* reverse die of a moneyer Andreu having a Canterbury mint-signature (Lincoln reverse die an4) was used with a class V*bi* obverse die supplied to Lincoln and that a similarly classified 'London' reverse die with this moneyer's name was used at Winchester.²⁶ The class V*bi* obverse dies used with the apparently unique 'London' reverse dies of Arnaud and Iohan have not provided die-links with reverse dies of substantive London moneyers or dies of any other moneyers. These reverse dies of Arnaud and Iohan have had to be treated as London dies in the tables and appendices but it must be suspected that the die of Arnaud was used at Canterbury and that the die of Iohan was used at one of the mints with a substantive moneyer named Iohan. Common Canterbury or London mint-signatures seem to have occasionally appeared on dies in error when other mint-signatures were required.

The substantive moneyers listed in appendix 2 increase from 36 in class V*aii* to 57 in class V*bi*, which is only four less than the peak attained in class V*bii*. The appointment of new moneyers and the opening of mints for the partial recoinage seems to have been substantially completed before the end of the supply of class V*bi* dies. All of the 16 mints of class V used at least one class V*bi* obverse die.

*Class V*bii* obverse dies and associated reverse dies*

The class V*bii* obverse dies sent to Chichester, Exeter, Lynn, Northampton and Norwich may all have been accompanied by two reverse dies each. The nine class V*bii* obverse dies and 18 associated reverse dies used at Exeter can be confidently interpreted as three successive batches of dies comprising one obverse die and two reverse dies for each of the three Exeter moneyers. The three Lynn moneyers might also have received a total of three class V*bii* obverse dies on three occasions, if it is supposed that an obverse die supplied with dies 4 and 5 and another obverse die supplied with dies 9 and 10 remain to be found. Three of the class V*bii* obverse dies and six of the reverse dies used at Norwich evidently constitute a single supply to the three moneyers there, but they have seem to have been exchanged for a batch containing two class V*bii* obverse dies and four reverse dies for each moneyer. One of the class V*bii* obverse dies used at Northampton (die 8) may not have been supplied with both of the reverse dies known to have been used with it. This die seems to have been the last obverse die used by the moneyer Roberd and the first obverse die used by Roberd T, Roberd's probable successor.

The Durham and York moneyers received their customary allocations of two obverse dies and two reverse dies each when class V*bii* obverse dies were provided. The supply of a total of eight obverse dies to the York moneyers Davi, Nicole, Renaud and Tomas was followed by the provision of four obverse dies for the use of Davi and Nicole only. The two Rochester moneyers also seem to have received batches of four obverse dies, on three occasions. Table 6 (p. 58) assumes that all of the dies sent to Rochester were supplied during the issue of class V*bii* dies although one of the twelve Rochester obverse dies must

²⁶ G. P. Gittoes, 'When is a mint-signature not a mint-signature?', read to the BNS 24 June 1980. A class V*bi* obverse die provides die-links between the 'London' reverse

die and Winchester reverse dies of the moneyers Andreu, Iohan and Lukas.

be attributed to class Vbi. No class Vbi Rochester reverse die has been found and it can be suggested that the class Vbi obverse die was supplied from a previously produced stock after the introduction of class Vbii.

The class Vbii obverse dies used by the Lincoln moneyers Andre(u) and Hue were probably supplied as part of an unparalleled batch of two dozen dies comprising six obverse dies and eighteen reverse dies. The Bury St Edmunds, Carlisle, Ipswich, Oxford and Rochester mints have not provided unequivocal evidence of the supply of class Vbii obverse dies and accompanying reverse dies in simple ratios. The class Vbii obverse dies used at Ipswich were probably supplied in pairs but these pairs have not been found combined with consistent numbers of reverse dies of the two Ipswich moneyers.

Some class Vbii obverse dies have been placed after dies of class Vbiii in the Chichester, Ipswich and Northampton die diagrams. Brand, who introduced class Vbiii as the designation for coins with eyes from a distinctive broken iron,²⁷ does not consider that this variety represents the last phase of class Vb.²⁸ The evidence of die-links has assisted the placing of class Vbii dies after class Vbiii dies in the Ipswich diagram and it must be significant that the die-links between class Vb and class Vc obverse dies used at Canterbury and Winchester involve class Vbii dies.

The Canterbury die-link between obverse dies of class Vbii and class Vc has been provided by coins from a reverse die of the moneyer Iohan B. Iohan B, his fellow Canterbury moneyer Iohan M and the Winchester moneyers Bartelme and Rauf seem to have started production during the supply of class Vbii obverse dies. All of the substantive Canterbury, London and Winchester moneyers known from coins having class Vbi obverses also used class Vbii obverse dies, with the exception of the London moneyer Henri(k).

Class Vbiii obverse dies and associated reverse dies

One of the pairs of obverse dies apparently supplied to the Ipswich moneyers consisted of class Vbiii dies. The moneyers at Chichester, Exeter, Northampton and Norwich probably received one class Vbiii obverse die and two reverse dies each, under a system of supply used for the provision of class Vbii dies to them. The Chichester moneyer Simon had probably been replaced by Willelm before class Vbiii dies were supplied and the Northampton moneyer Roberd T does not seem to have used dies of class Vbiii or subsequent varieties. No class Vbiii coins of the Oxford moneyer Henri have been available for study.

The three Lynn moneyers may have received two successive supplies of three class Vbiii obverse dies, comparable with the groups of three class Vbii obverse dies that may have been supplied to them, although only five class Vbiii obverse dies have been found. The Lincoln moneyers evidently exchanged their batch of six class Vbii obverse dies for a batch of six class Vbiii obverse dies but the accompanying reverse dies were probably reduced from nine to six per moneyer. If all of the six reverse dies of Hue known to have been used with class Vbiii obverse dies were supplied with them it is apparent that two of these reverse dies (h13 and h14) were available for use when class Vc obverse dies were received. The Lincoln and Norwich moneyers seem to have exchanged their class Vbiii obverse dies for class Vc obverse dies without an intermediate supply of class Vbii dies. The Exeter, Lynn and Oxford moneyers could have retained class Vbiii obverse dies until the end of the period of supply of class Vb dies. Similarly, the Bury St Edmunds, Carlisle, Durham,

²⁷ SCBI 21, *Coins in Yorkshire collections* (London, 1975), p. lvi. Some coins of class Vc have eyes from another broken iron.

²⁸ J. D. Brand, 'Some Short Cross questions reconsidered part 2', read to the BNS 23 February 1988.

Rochester and York moneyers may have retained class Vbii obverse dies during the supply of class Vbiii dies.

All the Canterbury, London and Winchester moneyers known from coins of class Vbii used class Vbiii obverse dies, with the apparent exceptions of the London moneyers Fulke/Folke, Ricard and Ricard T and the Winchester moneyers Milis/Miles and Ricard.

Class Vc obverse dies and associated reverse dies

It cannot be assumed that the Carlisle, Chichester, Exeter, Lynn, Oxford and Rochester moneyers, who do not seem to have produced coins of class Vc, lost the use of their dies before the introduction of that variety. The existence of die-links between class Vb and class Vc obverse dies might indicate that some class Vb obverse dies were used during the production of class Vc obverse dies if it is not entirely attributable to the survival of reverse dies originally associated with class Vb obverse dies.

The class Vc coins of Ipswich, Lincoln and Northampton studied have not provided any evidence of changes in die supply systems. The Lincoln moneyers may have received a batch of six class Vc obverse dies and twelve reverse dies similar to the batch containing class Vbiii dies, although only eight of the ten Lincoln reverse dies known from coins of class Vc have been found used with class Vc obverse dies exclusively.

The three Norwich moneyers received a group of three class Vc obverse dies in exchange for three class Vbiii obverse dies but the number of reverse dies per moneyer was reduced from two to one. The total number of dies in the batches supplied to Durham seems to have been increased from the usual four to six during the production of class Vc.²⁹ The York moneyers might have received their customary allocations of four dies but only two class Vc coins of York have been available for study, struck from one pair of dies. The Bury St Edmunds moneyer probably received only one class Vc obverse die, which may not have been supplied with all of the three reverse dies used with it.

All of the Canterbury, London and Winchester moneyers known from coins of class Vbiii used class Vc obverse dies³⁰ and the Winchester moneyer Milis/Miles is also named by coins of class Vc. One hundred and eight London reverse dies combined with class Vc obverse dies have the names of the new moneyers Abel, Rauf and Walter and another such reverse die has the hybrid name 'Ralter'. Abel, Rauf and Walter produced all of the class VIa coins of London with the previously established moneyer Ilg(i)er.³¹ The apparent absence of die-links between these three new moneyers and other class V moneyers, with the exception of Ilg(i)er, might support the suggestion that the number of London moneyers was reduced to the class Va total of four when they were appointed. However, the number of moneyers might have been reduced to four before or after the appointment of Abel, Rauf and Walter and these new moneyers might not have been appointed simultaneously.

The Bury St Edmunds, Lincoln, Northampton, Norwich and York moneyers probably received only one supply of class Vc obverse dies. It is difficult to disagree with Brand's suggestion that the closure of provincial mints was completed soon after the introduction of class Vc.³² The numbers of class Vc obverse dies in table 3 (p. 56) and appendix 3 are consistent with Stewart's proposal that the Canterbury mint probably continued produc-

²⁹ Allen, pp. 51 and 52.

³⁰ No class Vc coins of the London moneyer Wille(l)m have been available for study but Dr Stewart has informed me that the Aegean hoard contained a class Vc penny of this moneyer.

³¹ I. Stewart, 'English coinage in the later years of John and the minority of Henry III part I', *BNJ* 49 (1979), 26–41, at p. 38.

³² J. D. Brand, 'Some Short Cross questions', pp. 68 and 69.

tion, with the Durham and London mints, and closed before the end of the issue of class Vc.³³ Only the Durham and London mints were active during the production of class VIa.³⁴

The production of dies: chronology

The prohibition of clipped money announced by a Letter Patent of 9 November 1204³⁵ could have been associated with an official interest in the appearance of new coins. The apparent imitation of the original reformed coins of class I by class Va obverse dies might have resulted from such official interest, either before or after the issue of the Letter Patent.

The assize of 26 January 1205, which regulated the exchanging of clipped coins, assumed that it was possible to distinguish coins produced after Christmas 1204.³⁶ If this distinction was feasible it might have been achieved by the introduction of the cross pommée initial mark,³⁷ implying that class Vai reverse dies were not produced after Christmas 1204. Alternatively, class Vai obverse and reverse dies might have been produced after Christmas 1204 and the cross pommée initial mark might have been introduced later to facilitate the implementation of the assize.

The opening of some of the mints apparently required for the recoinage of clipped money can be related to available documentary evidence. The Chichester moneyers seem to have received their initial supply of class Vbi obverse dies and class Vail reverse dies as a result of a writ of 17 May 1205.³⁸ The supply of class Vail obverse dies probably ended at about this date, or before it. The continued supply of class Vail reverse dies may have been superseded by the supply of class Vbi reverse dies late in May 1205, or in June 1205. The abbot of Bury St Edmunds was granted a die on 12 June 1205,³⁹ and it must be assumed that the class Vbi reverse dies with the name of his moneyer were produced after that date. The supply of class Vbi obverse and reverse dies to Northampton may have followed the grant of dies to Peter of Stoke, which was intended to take effect from 24 June 1205.⁴⁰

There does not seem to be any documentary evidence that could be used to determine the dates of introduction of class Vbii and class Vbiii. Stewart considers that class Vc must have been produced in Lincoln before the end of King John's eighth regnal year, which finished on 30 May 1207.⁴¹ A Pipe Roll account for the profits of the Lincoln exchange refers to the king's seventh and eighth years only,⁴² but it must be admitted that the account does not explicitly indicate that the exchange was inactive after that period. The apparent absence of Pipe Roll accounts for individual exchanges relating to periods after 29 September 1207 noted by Stewart⁴³ may be consistent with the proposition that some of the associated mints producing class Vc did not operate after that date. Brand has suggested that class Vc might have been introduced after 10 January 1208, when the moneyers and others concerned with coinage were to meet at Westminster bringing their dies.⁴⁴ The summons to this meeting was sent to all of the class V mints, including the mints that are not known to have produced coins of class Vc, but it cannot be assumed that class

³³ I. Stewart, 'King John's recoinage and the Conference of Moneyers in 1208', above pp. 39–45.

³⁴ I. Stewart, 'English coinage in the later years of John and the minority of Henry III part I', pp. 31 and 38.

³⁵ The terms of this Letter Patent are summarised by R. Ruding, *Annals of the coinage* ... (3rd edition, 1840) I, p. 178.

³⁶ The best discussion of this assize is provided by S. Smith, introduction to *Pipe Roll 7 John (1205)*, pp. xxviii and xxix.

³⁷ Allen, p. 48.

³⁸ *Close Roll 6 John (1205)*, p. 32.

³⁹ *Charter Roll 7 John (1205)*, p. 156.

⁴⁰ *Fine Roll 7 John (1205)*, p. 294.

⁴¹ I. Stewart, 'King John's recoinage and the Conference of Moneyers in 1208', p. 43.

⁴² *Pipe Roll 12 John (1210)*, p. 10.

⁴³ I. Stewart, 'King John's recoinage and the Conference of Moneyers in 1208', p. 42.

⁴⁴ J. D. Brand, 'Some Short Cross questions', p. 68.

Vc obverse dies were not supplied before the meeting. The end of the production of class Vc has been dated to c.1208,⁴⁵ c.1209/1210⁴⁶ and c.1210⁴⁷ without decisive documentary evidence.

The production of dies: quantification

It may not be correct to assume that all of the class V obverse dies produced were supplied to the moneyers and used by them. However, a useful estimate of the total number of dies produced might be derived from estimates of the numbers of dies used.

Stewart Lyon has discussed the derivation and use of four formulae that can provide estimates of the number of dies used to produce a sampled coinage.⁴⁸ Lyon's testing of the formulae with simulated random samples illustrates the variability of the estimates produced and the underestimation that may be caused by bias in the sample. However, Lyon's formula (3) eliminates potentially overrepresented dies known from four or more coins and seems to provide relatively satisfactory results in his experiments. This formula has been applied to the obverse dies studied in table 3, using Lyon's notation. N is the number of coins studied, d_n is the number of dies represented exactly n times, d is the total number of dies found and the estimated total number of dies used is $D^{est} = d + d_1 \cdot (d_1 + d_2)/(2d_2 + 3d_3)$. The confidence limits D^{min} and D^{max} , which are intended to be 95 per cent limits when they are applied to a random sample, have been calculated using the method described by Lyon.⁴⁹

TABLE 3

Estimation of numbers of obverse dies

<i>Mint and class</i>		d_1	d_2	d_3	d	N	D^{min}	D^{est}	D^{max}
Canterbury	Va	5	3	5	24	95	24	26	28
	Vbi	12	10	11	42	111	42	47	53
	Vbii	21	22	12	69	172	73	80	90
	Vbiii	15	7	5	30	57	33	41	54
	Vc	10	9	11	40	117	40	44	48
Canterbury totals					205	552	212	238	273
London	Va	8	5	5	32	120	34	36	39
	Vbi	7	11	8	46	160	46	49	52
	Vbii	45	29	7	91	177	116	133	156
	Vbiii	16	5	1	23	34	33	49	93
	Vc	133	31	8	174	227	348	428	556
London totals					366	718	577	695	896
Winchester		9	13	10	78	388	79	82	84
Other mints		18	19	24	210	1369	214	216	218
Totals		299	164	107	859	3027	1082	1231	1471

Statistics for class Vai and class Vaii dies used at Canterbury and London and for dies of all types used at other mints have been aggregated in table 3 to provide significantly large frequencies. The aggregation of data relating to types or mints with differing ratios of coins

⁴⁵ I. Stewart, 'Some German coins overstruck with sterling types', in *Lagom. Festschrift für Peter Berghaus*, edited by T. Fischer and P. Ilisch (Münster, 1981), pp. 205–210, p. 209.

⁴⁶ I. Stewart, 'King John's recoinage and the Conference of Moneyers in 1208', above p. 45.

⁴⁷ J. D. Brand, 'Some Short Cross questions', pp. 68 and 69.

⁴⁸ S. Lyon, 'Die-estimation: some experiments with simulated samples of a coinage', above, pp. 1–12.

⁴⁹ Lyon, p. 7.

to recorded dies may cause underestimation of the numbers of dies used,⁵⁰ but this is relatively unimportant in table 3 as the numbers of dies estimated to be unrecorded are small. The comparatively large numbers of class Vb and class Vc dies used at Canterbury and London have not been aggregated. The estimates provided by the Canterbury dies of class Vbiii and the London dies of classes Vbii, Vbiii and Vc confirm Lyon's prediction that confidence limits will be unacceptably divergent when the number of coins per die is less than two. None of the sets of data in table 3 constitute the random samples required if it is to be categorically stated that the confidence limits are 95 per cent limits.

Approximate totals of D^{\min} , D^{est} and D^{\max} for the types listed in table 3 can be produced by allocating the dies estimated to be missing from the studies of the coins of Winchester and the 'other mints' to each type in proportion to the numbers of dies found.⁵¹ In table 4 the minimum possible percentage for a type within the estimates produced ($\%^{\min}$) has been derived from the relevant aggregate of D^{\min} and the combined estimates of D^{\max} for the other varieties. The maximum percentages ($\%^{\max}$) have been calculated using the total D^{\max} for the type concerned and D^{\min} estimates for the remaining types. Estimated percentages ($\%^{\text{est}}$) have been derived from the totals of D^{est} . All of the percentages in table 4 are subject to a combination of the approximations in the original estimates.

TABLE 4

Comparison of estimated numbers of obverse dies

	Canterbury			London			Winchester and other mints			Totals					
Class	D^{\min}	D^{est}	D^{\max}	D^{\min}	D^{est}	D^{\max}	D^{\min}	D^{est}	D^{\max}	D^{\min}	D^{est}	D^{\max}	$\%^{\min}$	$\%^{\text{est}}$	$\%^{\max}$
Va	24	26	28	34	36	39	19	19	19	77	81	86	5.3	6.6	7.9
Vbi	42	47	53	46	49	52	63	64	65	151	160	170	10.4	13.0	15.4
Vbii	73	80	90	116	133	156	148	152	154	337	365	400	23.9	29.7	34.9
Vbiii	33	41	54	33	49	93	30	30	30	96	120	177	6.9	9.7	15.2
Vc	40	44	48	348	428	556	33	33	34	421	505	638	33.6	41.0	49.1
Totals	212	238	273	577	695	896	293	298	302	1082	1231	1471		100.0	

The estimation of the numbers of reverse dies produced is more problematic than the estimation of the numbers of obverse dies. Reverse dies cannot be definitely attributed to classes Vbii, Vbiii or Vc as attributions to these varieties are based upon characteristics of the obverse. It is not possible to be certain that all of the reverse dies studied were produced before the introduction of class VI. Some reverse dies contemporary with class Vc obverse dies could have been partly or exclusively used with class VI obverse dies. However, estimates of the numbers of reverse dies used during the production of class V can be produced by allocating the reverse dies found to the types of the obverse dies used with them. In table 5 if a reverse die is known to have been used with obverse dies of more than one type it has been allocated to the type listed first. The London statistics for classes Vbii and Vbiii have been aggregated, as a separate analysis of the relatively small number of dies allocated to class Vbiii would not provide useful estimates ($d_1 = 24$, $d_2 = 3$, $d = 27$, $D^{\max} = 1568$). The die ratios have been calculated by comparing the estimated numbers of dies with the respective estimates for obverse dies.

⁵⁰ The value of D^{est} that can be calculated from an aggregate of the London obverse dies is 609 but the total estimate provided by separate calculations for different types is 695.

⁵¹ The discussion of the class Vail obverse dies supplied to these mints (p. 50) suggests that they have all been found and this has been assumed in table 4.

TABLE 5

Estimation of numbers of reverse dies

<i>Mint and class</i>		d_1	d_2	d_3	d	N	D^{min}	D^{est}	D^{max}	<i>Die ratios</i>		
Canterbury	Va	15	14	4	40	96	44	51	60	1:1.83	1:1.96	1:2.14
	Vbi	16	19	8	50	113	51	59	69	1:1.21	1:1.26	1:1.30
	Vbii	49	37	12	101	173	119	139	168	1:1.63	1:1.74	1:1.87
	Vbiii	19	9	3	33	54	40	53	77	1:1.21	1:1.29	1:1.43
	Vc	20	13	10	51	116	55	63	73	1:1.38	1:1.43	1:1.52
Canterbury totals					275	552	309	365	447	1:1.46	1:1.53	1:1.64
London	Va	35	22	7	72	136	88	103	123	1:2.59	1:2.86	1:3.15
	Vbi	58	23	8	93	145	133	160	202	1:2.89	1:3.27	1:3.88
	Vbii and Vbiii	134	32	4	170	210	362	463	642	1:2.43	1:2.54	1:2.58
	Vc	156	28	5	189	227	460	593	834	1:1.32	1:1.39	1:1.50
London totals					524	718	1043	1319	1801	1:1.81	1:1.90	1:2.01
Winchester		30	36	19	125	388	133	140	149	1:1.68	1:1.71	1:1.77
Other mints		52	65	66	328	1369	340	347	354	1:1.59	1:1.61	1:1.62
Totals		584	298	146	1252	3027	1825	2171	2751	1:1.69	1:1.76	1:1.87

The supply of dies

In 1205 the *cuneator* (i.e. the hereditary die-maker) was instructed to supply dies to a representative of the bishop of Chichester, to William of Wrotham and Reginald of Cornhill for use in Chichester and to Peter of Stoke for use in Northampton.⁵² There does not seem to be any documentary evidence indicating that dies were supplied through the exchequer during the production of class V but it cannot be assumed that they were always directly supplied by the *cuneator*.

TABLE 6

No. of obverse dies + no. of reverse dies supplied per moneyer

<i>Mint</i>	<i>Vai</i>	<i>Vaii</i>	<i>Vbi/Vaii</i>	<i>Vbi</i>	<i>Vbii</i>	<i>Vbiii</i>	<i>Vc</i>
Bury St. Edmunds	-	-	-	1+4?	?+?	-	1+?
Canterbury	?+?	?+?	?+?	?+?	?+?	?+?	?+?
Carlisle	-	-	-	1+1	?+?	-	-
Chichester	-	-	1+1	1+1	1+2	1+2	-
Durham	-	2+2	-	2+2	2+2	-	2+2,3+3
Exeter	-	1+1	-	1+2	1+2	1+2	-
Ipswich	-	-	-	1+1?, 1(+2?)	1+?	1+?	1+?
Lincoln	-	1+2	-	1+2	3+9	3+6	3(+6?)
London	?+?	?+?	?+?	?+?	?+?	?+?	?+?
Lynn	-	-	-	1+1	1+2	1(+2?)	-
Northampton	-	-	-	1+1,1+2	1+2	1(+2?)	1+2
Norwich	-	1+2	-	1+2	1+2,2+4	1+2	1+1
Oxford	-	-	-	1+2	?+?	1(+1?)	-
Rochester	-	-	-	-	2+2,2(+4?)	-	-
Winchester	-	1+1	1+1	?+?	?+?	?+?	?+?
York	-	2+2	-	2+2	2+2	-	2+?

⁵² *Close Roll 6 John (1205)*, p. 32 and *Fine Roll 7 John (1205)*, p. 294.

It is probable that class V dies were usually or always supplied to Chichester, Durham, Exeter, Lincoln, Lynn, Northampton, Norwich, Rochester and York in sets or batches consisting of obverse and reverse dies in simple ratios. However, at least seven different ratios have been found and no mint has provided unequivocal evidence of the consistent application of only one ratio throughout the production of class V.

It might be assumed that the exceptional numbers of dies used at Canterbury and London were periodically supplied in variable quantities related to the numbers of used dies that had to be replaced. The clear difference between the Canterbury and London die ratios during the production of classes Va and Vb shown by table 5 (p. 58) could have been caused by obverse and reverse dies becoming unusable at dissimilar relative rates, or by the application of different criteria when dies were selected for replacement. However, it is also possible that dies were withdrawn from use and replaced at either or both of the mints in predetermined ratios.

There are no die-links between the sets of dies supplied to the Chichester moneyers or the batches of dies supplied to the Exeter and Rochester moneyers, indicating that all usable dies had to be surrendered when new dies were provided. A similar system seems to have been applied to the supply of dies to Durham, Lynn, Norwich and York but at each mint one obverse die from the first batch of dies supplied was available for use when the second batch was received. Dies from two of the batches supplied to Lincoln seem to have been retained after the surrender of most of the dies in the batch. Used sets of dies were often surrendered when new sets were supplied to the Northampton moneyers.

The use of dies

The table of links between Canterbury reverse dies in appendix 6 provides clear evidence of the sharing of obverse dies also found in the studies of Exeter, Ipswich, Lincoln, Lynn, Northampton, Norwich, Oxford, Rochester and York coins. The percentage of the links in the table that involve dies of different moneyers (87.5 per cent) is only 1.4 per cent less than the percentage that might be expected if equal numbers of dies of the nine Canterbury moneyers were randomly combined with the available obverse dies ($8/9 = 88.9$ per cent). Every possible link between reverse dies of two Canterbury moneyers has been found with the single exception of a link between dies of Iohan B and Simon/Simun. Moneyers sharing obverse dies might have shared premises but it is also possible that they worked separately, using dies kept centrally.

The Winchester moneyers seem to have had a single mint premises during the production of the Short Cross coinage⁵³ but this would not be readily deduced from the table of links between their reverse dies. Fifteen of the 32 possible links between dies of different moneyers have not been found and most of the numbers of links are small enough to have been the result of occasional borrowing of dies. I am indebted to Mr Gittoes for the suggestion that the relatively large numbers of links between dies of Adam and Milis/ Miles, Andreu and Lukas, Bartelme and Rauf and Iohan and Ricard might indicate that these pairs of moneyers shared workshops within the mint. It will be recalled that Andreu and Lukas are the two new moneyers named by coins of class Vbi and that Bartelme and Rauf are the two moneyers who seem to have started production during the supply of class Vbii dies. If obverse dies were always completely shared by one of the pairs of moneyers 50.0 per cent of the links in the table might be between dies of different moneyers. This percentage would be increased if obverse dies were shared by more than one pair of moneyers or used at times when only one reverse die of a moneyer was available. The actual percentage is 58.7 per cent, or 54.4 per cent if the link involving the die of Henri and the links between moneyers not associated in the same pair are excluded.

⁵³ *Winchester in the early Middle Ages: and edition and discussion of the Winton Domesday* (Winchester Studies 1), edited by M. Biddle (Oxford, 1976), pp. 419, 422, 513 and 514.

Only 29.0 per cent of the London coins studied are die-duplicates of other coins examined but the corresponding percentages for Canterbury and Winchester are 53.6 per cent and 77.8 per cent respectively. Consequently it is probable that London die-combinations and the die-links provided by those die-combinations are relatively underrepresented. However, all of the substantive London moneyers known from coins of class Vb are die-linked to each other either directly or through links with a third moneyer, excepting Benoit and Renner and also Renner and Wille(l)m L.

Mint output and the English coinage supply

Nicholas Mayhew has used an estimate of the number of class V reverse dies used at Lincoln (58 dies) to tentatively estimate their output (1,160,000 coins or £4,833) and the total output of the English mints during the production of class V (£241,650).⁵⁴ Mayhew's estimate of the number of Lincoln reverse dies is only two more than the maximum number that would be consistent with the pattern of die supply indicated by table 6 (p. 58) and appendix 7 but his calculations of outputs rely upon the assumption that the dies produced an average of 20,000 coins each. The average output of the Long Cross reverse dies used at Shrewsbury was almost exactly 20,000 coins⁵⁵ and reverse dies supplied to the Canterbury and London mints during the reign of Edward I seem to have produced an average of approximately 19,500 coins each, if it can be assumed that the die ratio was 1:2 in this case.⁵⁶ However, calculated average outputs of Edward I obverse dies at various mints have varied from 21,750⁵⁷ to 75,000.⁵⁸ The average output of reverse dies may not have been as variable as the output of obverse dies, which might have been partly dependent upon the average thickness of flans,⁵⁹ but it is evident that estimates of total output based upon an assumed average output must be extremely speculative. If Mayhew's suggested average output and the D^{\min} and D^{\max} estimates for reverse dies (p. 58) can be used as the basis of calculation the approximate total value of the class V coins produced might be estimated to have been £150,000–£230,000.

The closure of all of the new or reopened mints before the end of the production of class V probably indicates that the recoinage of clipped Short Cross coins required by the assize of January 1205 had been substantially completed. Pre-class V coins may have been recoined during the production of Short Cross types later than class V but hoards deposited during that production might possibly be used to approximately quantify the survival of pre-class V coins at the end of the production of class V. Unfortunately, eight hoards deposited during the production of classes VII and VIII that have been analysed by F. Dumas and Brand⁶⁰ contained calculated percentages of pre-class V pennies ranging from 1.8 per cent to 11.3 per cent. If coins of classes VII and VIII are excluded from the numbers of coins in each hoard,⁶¹

⁵⁴ N. J. Mayhew, 'Frappes de monnaies et hausse des prix en Angleterre de 1180 à 1200', in *Études d'histoire monétaire XIIe-XIXe siècles*, edited by J. Day (Lille, 1984), pp. 159–177, at pp. 163 and 165.

⁵⁵ J. D. Brand, 'The Shrewsbury mint, 1249–50', in *Mints, dies and currency*, edited by R. A. G. Carson (London, 1971), pp. 129–150, at pp. 135, 139 and 140.

⁵⁶ M. Mate, 'Coin dies under Edward I and II', *NC* 7th ser. 9 (1969), 207–218, at p. 209.

⁵⁷ Mate, p. 211.

⁵⁸ I. Stewart, 'Second thoughts on medieval die-output', *NC* 7th ser. 4 (1964), 293–303, at pp. 301–302.

⁵⁹ J. D. Brand, 'The Shrewsbury mint, 1249–50', p. 139 suggests that an apparent reduction of the average output of Long Cross obverse dies used at Shrewsbury might have been caused by the striking of thinner flans, with a consequent increase in the potentially damaging force transmitted

to the obverse die.

⁶⁰ F. Dumas and J. D. Brand, 'The British coins in the Gisors (1970) hoard', *BNJ* 40 (1971), 22–43, at pp. 26–30.

⁶¹ Some of the statistics published by Dumas and Brand have been slightly amended in table 7. The revised statistics for the 1911 Ribe hoard ('Ribe I') have been taken from a summary provided by I. Stewart and J. D. Brand, 'A second find of English sterling from Ribe (1958)', *NNA* 1971, 38–59, at pp. 55–59, which excludes some irregular coins. Apparently imitative coins have not been subtracted from the statistics for other hoards if they were published as regular coins but specimens attributed to the Rhuddlan mint have been excluded from all of the statistics. The numbers of pre-class V coins in the Eccles and Colchester hoards have been derived from statistics for Evans classes I and II but it should be noted that Evans class II included coins of class Vai (eg. *NC* 4th ser. 3 (1903), pl. 4, 10).

to eliminate distortion caused by differing dates of deposit, the percentages vary from 6.8 per cent to 46.2 per cent.

TABLE 7

English pennies in hoards (classes I-VI)

	Clifton	Eccles	'France'	Colchester	Gisors	Ribe I	Ribe II	Wrexham
Classes I-IV	4(7.7%)	c. 200(7.4%)	35(14.4%)	1,196(27.4%)	73(26.2%)	34(11.0%)	3(6.8%)	6(46.2%)
Classes V and VI	48(92.3%)	c. 2,520(92.6%)	208(85.6%)	3,163(72.6%)	206(73.8%)	276(89.0%)	41(93.2%)	7(53.8%)
Totals	52	c. 2,720	243	4,359	279	310	44	13

The statistics provided by the relatively small numbers of coins from the Wrexham hoard can be disregarded as the published parcel from this hoard seems to have been unrepresentative,⁶² but the wide variation shown by the other statistics requires explanation. The higher percentages of pre-class V coins could indicate a preference for coins of earlier classes, or the inclusion of coins accumulated long before the deposition of the hoard, but it may be more probable that the lower percentages are attributable to a preference for fresher coins. The high percentages of pre-class V coins in the Colchester hoard, which is the largest recorded hoard of Short Cross coins, and the Gisors hoard may reflect the percentage of such coins in the available currency.⁶³ Unfortunately, the Colchester hoard was published before the introduction of Lawrence's classification⁶⁴ and consequently the number of class V pennies provided by it cannot be precisely determined. If the ratio of pre-class V pennies to pennies of class V in the Gisors hoard (1:1.56)⁶⁵ is applied to the estimate of total output during the production of class V (£150,000-£230,000) the quantity of pre-class V coinage surviving the production of class V might be tentatively estimated to have been approximately £100,000-£150,000. If hoards with relatively low percentages of pre-class V coins are used as the basis of calculation, or if it is assumed that a significant percentage of the class V output was eliminated by export or other wastage before the end of its production, the estimate of the quantity of pre-class V coins surviving would be reduced. Any calculation of the total amount of English and non-English coinage available in England when the production of class V was completed must be extremely problematic. The estimates produced do not conflict with Mayhew's proposal that the approximate total value of the English currency in 1205 was £250,000,⁶⁶ but this proposal cannot be properly evaluated without comprehensive studies of the dies used to produce the Short Cross coins available before the introduction of class V.

⁶² J. M. Lewis, 'A Short Cross hoard from Wrexham', *BNJ* 39 (1970), 19-23, at p. 22.

⁶³ it cannot be assumed that statistics from non-English hoards always accurately represent the English currency but it has been suggested by Dumas and Brand, p. 28 that the English content of the Gisors hoard was principally or entirely assembled in England.

⁶⁴ H. A. Grueber, 'A find of silver coins at Colchester', *NC* 4th ser. 3 (1903), 111-176.

⁶⁵ Dumas and Brand, p. 25.

⁶⁶ N. J. Mayhew, 'Money and prices in England from Henry II to Edward III', *Agricultural History Review* 35 (1987), 121-132, at p. 125.

APPENDIX 1

The classification used

(C = characteristic of every die recorded, x = characteristic of at least one die)

	Vai	Vaii	Vbi	Vbii	Vbiii	Vc
No enclosed pellets in the curls	C					
Enclosed pellets in some or all of the curls		C	C	C	C	C
More than two curls on one or both side(s)	x	x	x	x		
Two curls only on both sides	x	x	x	x	C	C
Five 'pearls' in the crown	x	x	x	x	x	x
Six 'pearls' in the crown	x	x	x	x	x	
Seven 'pearls' in the crown	x	x		x		x
Large annulet eyes	x					
Eyes from a broken punch					C	x
Sceptre on the right	x					
C ornamented by pellet(s)	x	x	x	x		
E ornamented by pellet(s)	x	x	x	x		
Flat-topped K	C	C	C			
Round-topped K				C	C	C
K ornamented by a pellet		x				
Flat-topped R	x	C	C			
Round-topped R	x			C	C	C
R ornamented by pellet(s)	x	x	x	x		
Reversed S	x	C				
Normal S	x		C	C	C	C
S ornamented by pellet(s)			x			
X ornamented by pellets			x			
'St. Andrew's cross' X						C
Colon(s) on the obverse or reverse	x	x	x	x		
Stop before REX	x	x		x		
REX after the sceptre				x		x
RE after the sceptre	x					
EX after the sceptre	x	x	x	x	C	x
X, X' or 'X' after the sceptre		x	x	x		
Xh after the sceptre	x					
Cross pattée initial mark	C		C	C	C	C
Cross pommée initial mark		C				

APPENDIX 2

Coins studied (obverse classification only)

Mint/moneyer	Vai	Vaii	Vbi	Vbii	Vbiii	Vc	Moneyer totals	Mint totals
Bury St Edmunds								
Fulke/Folke	-	-	24	41	-	6		71
Canterbury								
(H)ernaud/Arnaud								
Arnold	3	7	10	24	4	18	66	
Coldwine	1	13	13	25	9	12	73	
Hue	1	15	16	15	7	12	66	
Iohan	-	21	31	21	4	5	82	

<i>Mint/moneyer</i>	<i>Vai</i>	<i>Vaii</i>	<i>Vbi</i>	<i>Vbii</i>	<i>Vbiii</i>	<i>Vc</i>	<i>Moneyer totals</i>	<i>Mint totals</i>
Iohan B	-	-	-	4	7	13	24	
Iohan M	-	-	-	10	9	22	41	
Robert	2	12	20	20	8	17	79	
Samuel	2	9	14	19	4	10	58	
Simon/Simun	-	9	7	34	5	8	63	
Canterbury totals	9	86	111	172	57	117		552
Carlisle								
Tomas	-	-	11	18	-	-		29
Chichester								
Pierres	-	-	3	13	14	-	30	
Rau(1)f	-	-	5	29	3	-	37	
Simon	-	-	6	20	-	-	26	
Willelm	-	-	-	18	3	-	21	
Chichester totals	-	-	14	80	20	-		114
Durham								
P(i)eres	-	18	9	27	-	25		79
Exeter								
Gilebert/Gileberd	-	2	4	15	5	-	26	
Iohan	-	2	3	15	6	-	26	
Ricard	-	6	3	18	6	-	33	
Exeter totals	-	10	10	48	17	-		85
Ipswich								
Alisandr(e)/Alisandar	-	-	19	22	4	9	54	
Iohan	-	-	8	22	5	90	125	
Ipswich totals	-	-	27	44	9	99		179
Lincoln								
Alain	-	16	-	-	-	-	16	
Andre(u)	-	10	6	19	23	10	68	
Hue	-	2	-	35	29	13	79	
Iohan	-	4	-	-	-	-	4	
Rauf	-	5	8	-	-	-	13	
Ricard	-	10	9	-	-	-	19	
Tomas	-	2	16	-	-	-	18	
Lincoln totals	-	49	39	54	52	23		217
London								
Abel	-	-	-	-	-	36	36	
Adam	-	-	10	17	6	12	45	
Arnaud	-	-	3	-	-	-	3	
Beneit	-	-	14	17	3	8	42	
Fulke/Folke	3	15	34	10	-	-	62	
Henri(k)	11	33	6	-	-	-	50	
Ilg(i)er	-	-	10	8	2	32	52	
Iohan	-	-	4	-	-	-	4	
'Ralter'	-	-	-	-	-	1	1	
Rauf	-	-	-	-	-	51	51	
Rener	-	1	2	21	3	9	36	
Ricard	5	20	20	2	-	-	47	
Ricard B	-	-	7	18	3	11	39	
Ricard T	-	1	6	11	-	-	18	
Walter	-	-	-	-	-	35	35	
Wille(l)m	5	25	32	5	2	-	69	

DIES FOR SHORT CROSS CLASS V

<i>Mint/moneyer</i>	<i>Vai</i>	<i>Vaii</i>	<i>Vbi</i>	<i>Vbi</i>	<i>Vbii</i>	<i>Vc</i>	<i>Moneyer totals</i>	<i>Mint totals</i>
Wille(1)m B	-	1	6	17	9	8	41	
Wille(1)m L	-	-	5	25	1	10	41	
Wille(1)m T	-	-	1	26	5	14	46	
London totals	24	96	160	177	34	227		718
Lynn								
Iohan	-	-	6	15	3	-	24	
Nicole	-	-	3	8	10	-	21	
Wilhelm	-	-	4	13	5	-	22	
Lynn totals	-	-	13	36	18	-		67
Northampton								
Adam	-	-	13	29	4	5	51	
Robert	-	-	18	1	-	-	19	
Robert T	-	-	-	32	-	-	32	
Northampton totals	-	-	31	62	4	5		102
Norwich								
Gi(e)f(e)rei	-	1	6	15	10	7	39	
Iohan	-	17	2	22	6	10	57	
Renald/Renaud	-	9	12	18	8	5	52	
Norwich totals	-	27	20	55	24	22		148
Oxford								
Ailwine	-	-	10	21	2	-	33	
Henri	-	-	10	5	3	-	18	
Miles	-	-	7	17	-	-	24	
Oxford totals	-	-	27	43	5	-		75
Rochester								
Alisandr(e)	-	-	-	25	-	-	25	
Hunf(e)rei	-	-	5	27	-	-	32	
Rochester totals	-	-	5	52	-	-		57
Winchester								
Adam	-	3	20	26	2	8	59	
Andreu	-	-	8	35	2	3	48	
Bartelme	-	-	-	32	3	3	38	
Henri	-	7	-	-	-	-	7	
Iohan	-	4	19	24	-	3	50	
Lukas	-	-	10	25	3	4	42	
Milis/Miles	-	6	18	47	-	7	78	
Rauf	-	-	-	28	4	8	40	
Ricard	-	1	8	17	-	-	26	
Winchester totals	-	21	83	234	14	36	388	388
York								
Davi	-	20	9	13	-	-	42	
Nicole	-	7	20	25	-	2	54	
Renaud	-	-	6	14	-	-	20	
Tomas	-	1	8	21	-	-	30	
York totals	-	28	43	73	-	2		146
Totals	33	335	627	1216	254	562		3027

APPENDIX 3

Obverse dies

<i>Mint</i>	<i>Vai</i>	<i>Vaii</i>	<i>Vbi</i>	<i>Vbii</i>	<i>Vbiii</i>	<i>Vc</i>	<i>Totals</i>
Bury St Edmunds	-	-	1	4	-	1	6
Canterbury	4	20	42	69	30	40	205
Carlisle	-	-	1	3	-	-	4
Chichester	-	-	6	11	3	-	20
Durham	-	2	2	6	-	7	17
Exeter	-	3	3	9	3	-	18
Ipswich	-	-	7	10	2	4	23
Lincoln	-	4	3	6	6	6	25
London	10	22	46	91	23	174	366
Lynn	-	-	3	7	5	-	15
Northampton	-	-	6	9	1	1	17
Norwich	-	2	3	9	3	3	20
Oxford	-	-	3	4	2	-	9
Rochester	-	-	1	11	-	-	12
Winchester	-	4	16	45	4	9	78
York	-	4	7	12	-	1	24
Totals	14	61	150	306	82	246	859

APPENDIX 4

Obverse die survival frequencies

<i>No. of coins from die:</i>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	20	24	40	56	<i>Total no. of dies</i>	<i>Coins per die</i>
Bury St Edmunds		0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0	1	0	0	6	11.8
Canterbury	Vai	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2.2
	Vaii	3	3	4	3	2	1	2	0	0	1	0	0	1	0	0	0	0	0	0	0	20	4.3
	Vbi	12	10	11	5	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	42	2.6
	Vbii	21	22	12	7	2	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	69	2.5
	Vbiii	15	7	5	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	1.9
	Vc	10	9	11	3	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	40	2.9
	Vai-Vc	63	51	44	21	8	6	8	2	0	1	0	0	1	0	0	0	0	0	0	0	205	2.7
Carlisle		1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	4	7.2
Chichester		2	3	5	0	1	1	2	1	2	0	1	0	0	1	1	0	0	0	0	0	20	5.7
Durham		1	3	2	2	2	5	1	0	0	0	1	0	0	0	0	0	0	0	0	0	17	4.6
Exeter		3	0	2	4	1	4	1	3	0	0	0	0	0	0	0	0	0	0	0	0	18	4.7
Ipswich		4	4	2	4	4	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1	23	7.8
Lincoln		2	2	0	3	1	2	1	0	3	1	1	2	2	3	1	0	1	0	0	0	25	8.7
London	Vai	3	2	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	2.4
	Vaii	5	3	1	5	2	1	2	0	0	1	2	0	0	0	0	0	0	0	0	0	22	4.4
	Vbi	7	11	8	7	7	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	46	3.5
	Vbii	45	29	7	5	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	91	1.9
	Vbiii	16	5	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	1.5
	Vc	133	31	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174	1.3
	Vai-Vc	209	81	29	20	11	4	6	2	0	2	2	0	0	0	0	0	0	0	0	0	366	2.0
Lynn		0	0	7	3	2	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	15	4.5
Northampton		0	1	1	6	3	0	0	3	1	0	1	0	0	1	0	0	0	0	0	0	17	6.0
Norwich		0	1	1	2	2	2	4	2	2	0	1	1	1	0	1	0	0	0	0	0	20	7.4
Oxford		1	0	0	1	1	0	0	1	1	1	0	1	2	0	0	0	0	0	0	0	9	8.3
Rochester		4	1	2	1	1	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	12	4.7

DIES FOR SHORT CROSS CLASS V

67

<i>No. of coins from die:</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>	<i>38</i>	<i>53</i>	<i>Total no. of dies</i>
Wille(l)m L	26	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33
Wille(l)m T	25	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
London totals	383	105	24	8	3	1	0	0	0	0	0	0	0	0	0	0	0	0	524
Lynn	5	7	4	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	24
Northampton	2	4	10	5	5	1	0	0	0	0	1	0	0	0	0	0	0	0	28
Norwich	3	8	2	6	4	2	4	2	0	1	0	0	1	0	0	0	0	0	33
Oxford	3	2	2	1	1	4	1	0	0	1	0	1	0	0	0	0	0	0	16
Rochester	3	2	1	0	3	1	1	0	1	1	0	0	0	0	0	0	0	0	13
Winchester																			
Adam	3	5	2	0	2	1	0	0	0	1	0	0	0	1	0	0	0	0	15
Andreu	6	2	4	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	18
Bartelme	6	4	1	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	14
Henri	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Iohan	7	2	5	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	19
Lukas	2	8	1	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Milis/Miles	3	3	2	2	4	1	0	1	0	1	1	0	0	0	0	0	0	0	18
Rauf	0	7	1	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	12
Ricard	3	5	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Winchester totals	30	36	19	16	13	3	1	1	1	2	1	0	1	1	0	0	0	0	125
York	2	3	2	3	4	1	2	2	1	2	2	0	1	0	0	0	0	0	25
Totals	584	298	146	72	62	26	17	14	8	10	6	1	3	2	0	1	1	1	1252

APPENDIX 6

Links between obverse dies

<i>Mint</i>	<i>IVc-Vai</i>	<i>Vai-Vai</i>	<i>Vai-Vaii</i>	<i>Vaii-Vaii</i>	<i>Vaii-Vbi</i>	<i>Vbi-Vbi</i>	<i>Vbi-Vbii</i>
Canterbury	1	0	2	8	1	33	3
London	0	0	2	7	9	25	1
Winchester	-	-	-	2	0	10	3

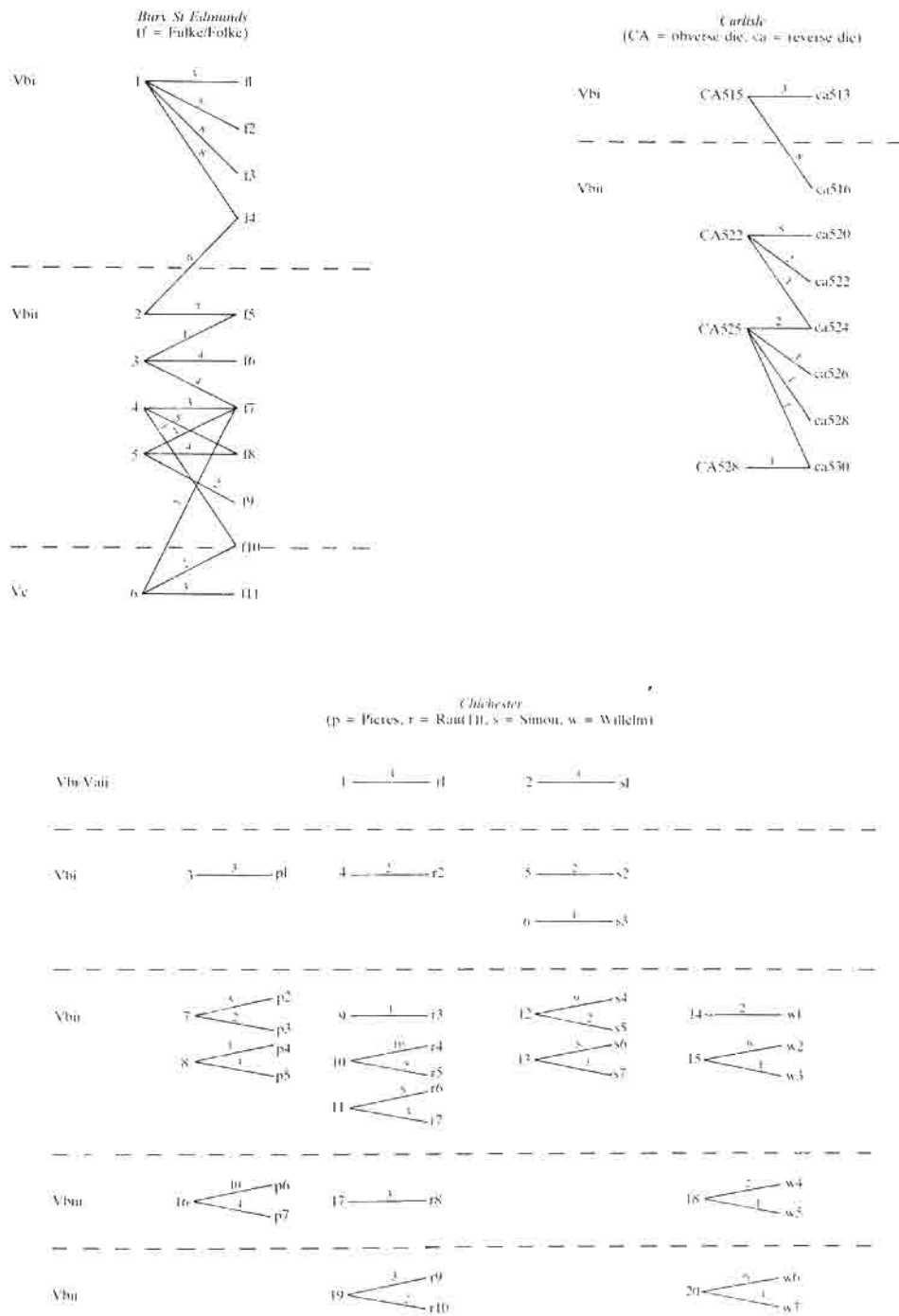
<i>Mint</i>	<i>Vbii-Vbii</i>	<i>Vbii-Vbiii</i>	<i>Vbii-Vc</i>	<i>Vbiii-Vbiii</i>	<i>Vbiii-Vc</i>	<i>Vc-Vc</i>
Canterbury	35	3	1	10	0	23
London	15	3	0	1	0	13
Winchester	31	6	12	0	0	5

Links between reverse dies

Canterbury (H/A = (H)ernaud/Arnaud/Arnold, C = Coldwine, H = Hue, I = Iohan, IB = Iohan B, IM = Iohan M, R = Roberd, Sa = Samuel, Si = Simon/Simun)

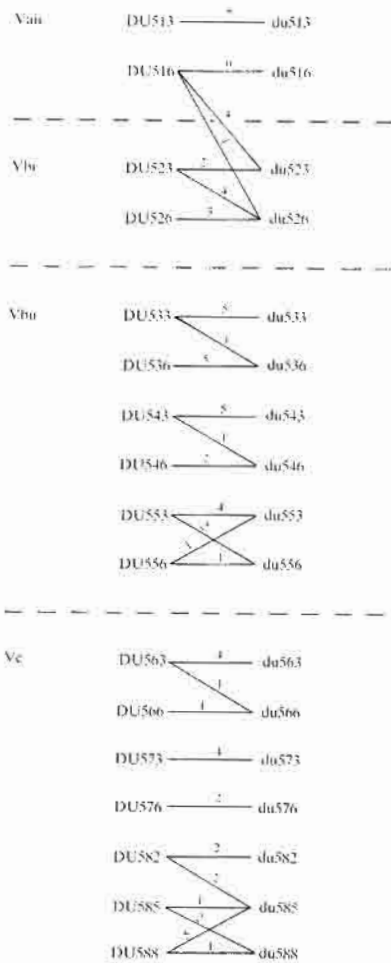
H/A	3								
C	11	1							
H	12	9	3						
I	11	13	12	6					
IB	1	4	7	1	0				
IM	1	3	1	1	3	7			
R	12	6	9	13	1	6	5		
Sa	12	11	9	8	5	2	10	4	
Si	9	8	4	4	0	2	6	5	4
	H/A	C	H	I	IB	IM	R	Sa	Si

APPENDIX 7

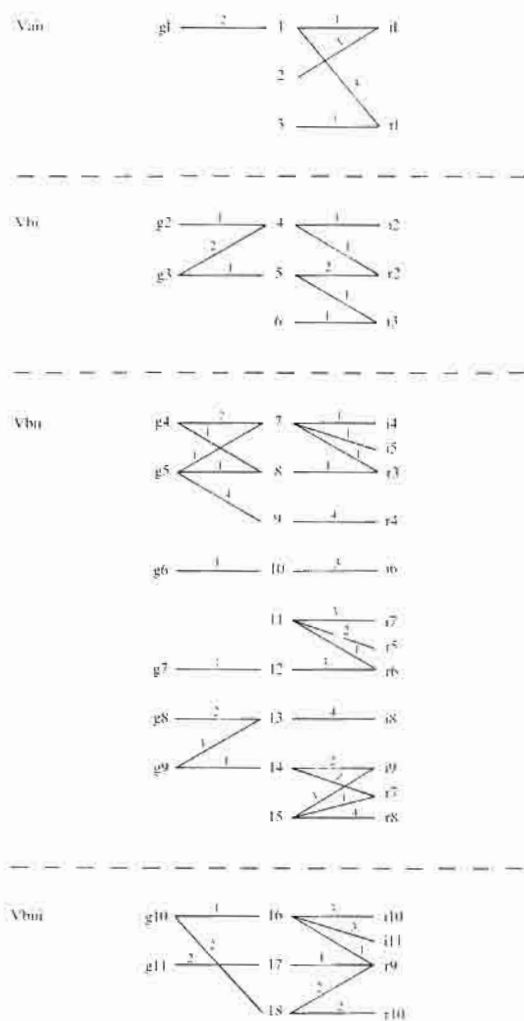


Darham

(DU = obverse die, du = reverse die)

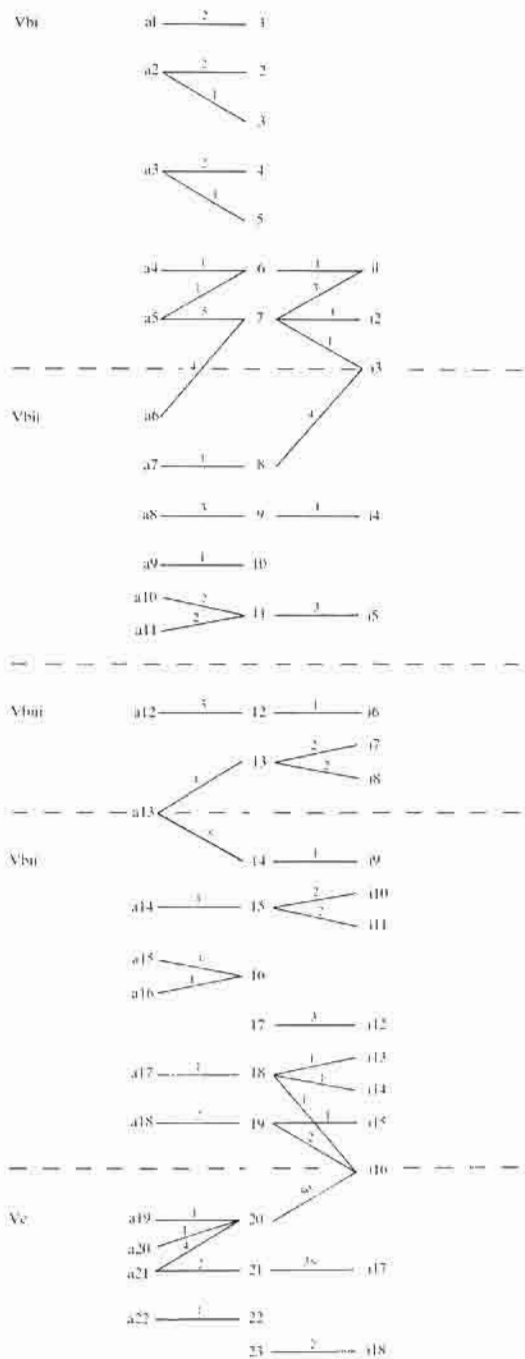
*Exeter*

(g = Gilbert/Gilberd, i = Iohann, r = Ricard)

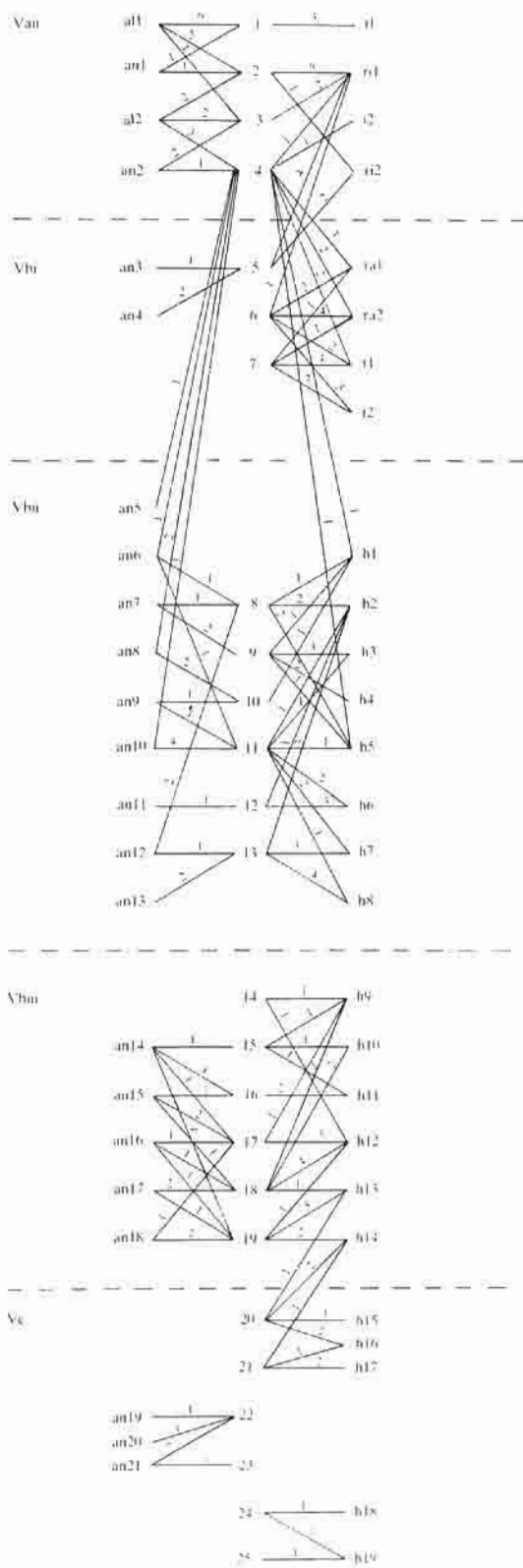


Igeswite

(a = Alisandr(c)/Alisandar, i = lohan)

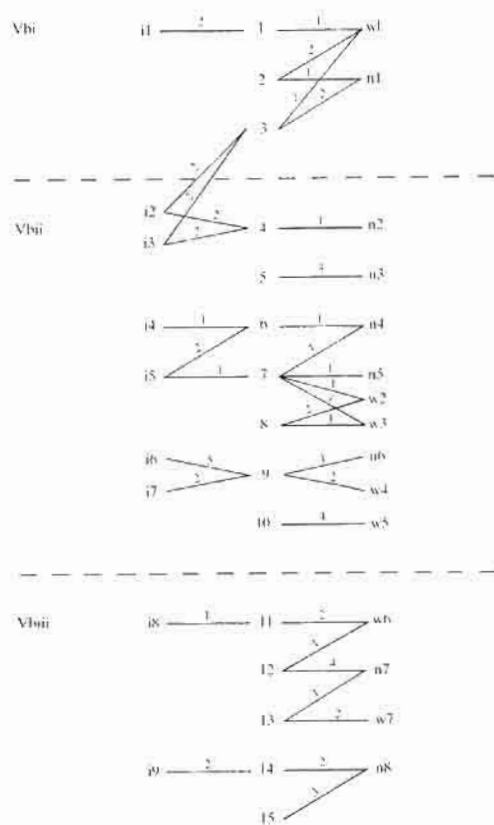
*Lincolntei*

{a} = Alain, an = Andre(a), h = Hue, j = Julian, ra = Raul, ri = Ricard, t = Tomasi



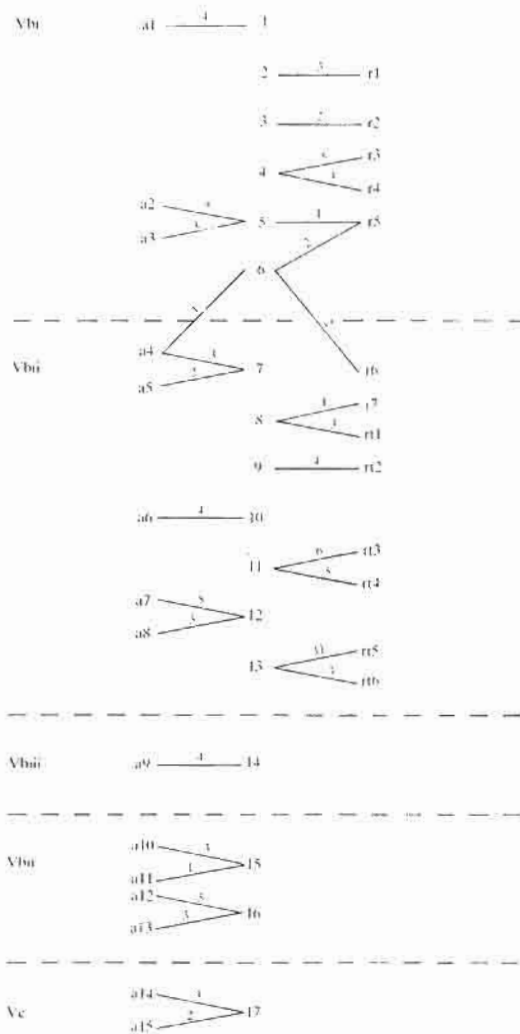
Lyon

(i = Iohān, n = Nicole, w = Wilhelm)



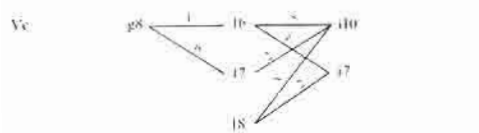
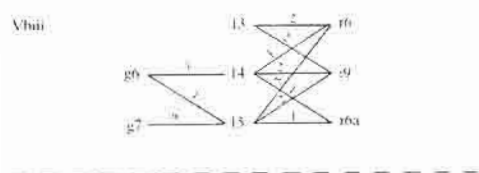
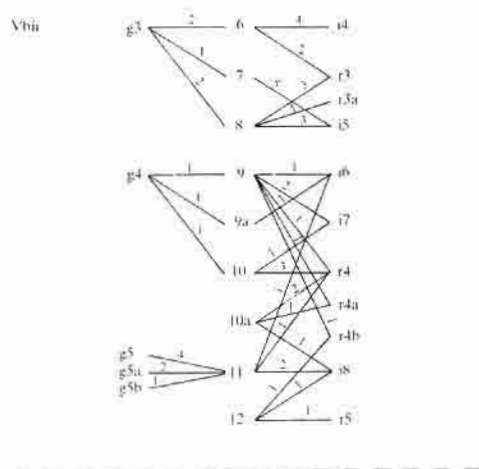
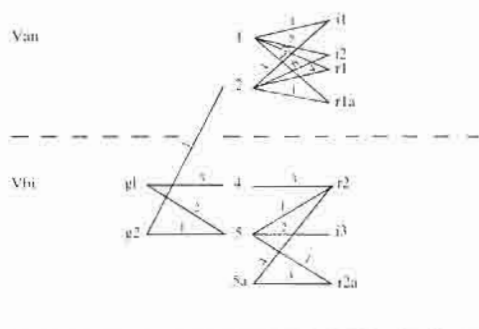
Northampton

(a = Adam, r = Robert, t = Robert T)



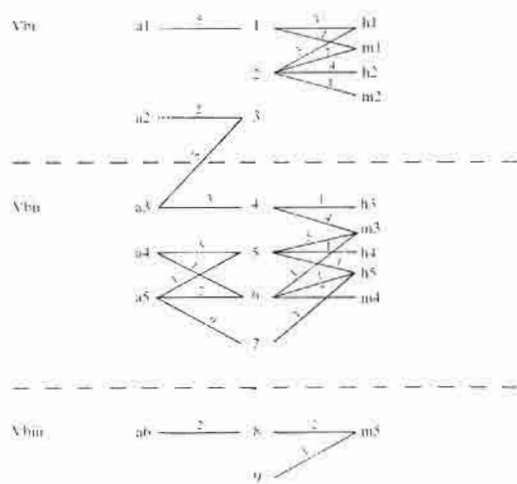
Nonwytte Jr

($g = G(c)I(c)rci$, $i = \text{Iohan}$, $i = \text{Renak/Renaud}$)



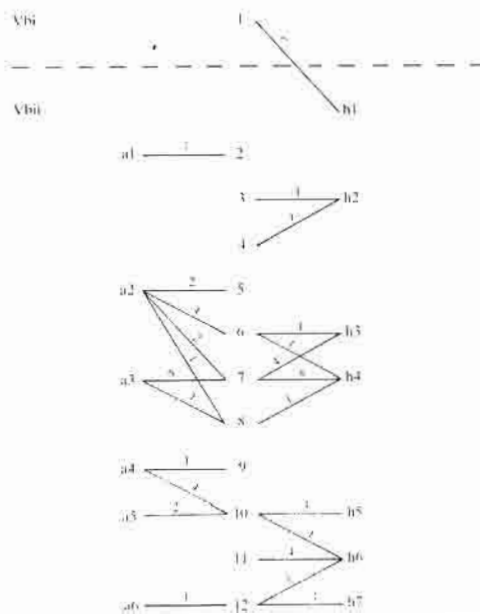
Oxford

(a = Ailwin; h = Height; m = Miles)



References

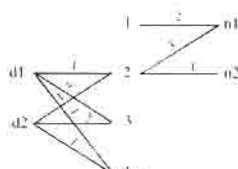
(a = Absatzrate), h = Humilität)



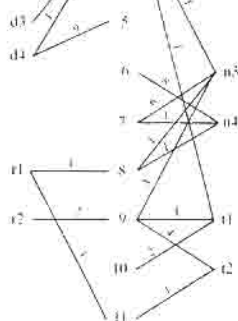
York

(d = Davi, n = Nicole, r = Renaud, t = Tomas)

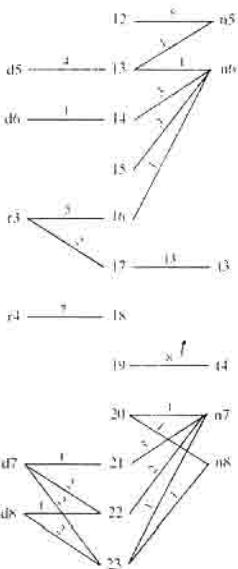
Van



Vbi



Vbii



Vc

24 — 2 — n9

Sources of Coins Studied

American Numismatic Society
 Art Gallery and Museums, Brighton
 Ashmolean Museum, Oxford
 A. H. Baldwin and Sons, Ltd.
 Bibliothèque Nationale, Cabinet des Medailles
 The late C. E. Blunt, Esq.
 The late Dr J. D. Brand
 British Museum, Department of Coins and Medals
 I. R. Buck, Esq.
 Central Museum, Northampton
 City of Birmingham Museums and Art Gallery
 Colchester and Essex Museum
 R. L. Davis, Esq.
 A. Dawson, Esq.
 G. V. Doubleday, Esq.
 Dr R. J. Eaglen
 Fitzwilliam Museum, Cambridge
 G. P. Gittoes, Esq.
 Grosvenor Museum, Chester
 Dr E. J. Harris
 Hunterian Museum, University of Glasgow
 The late F. Elmore Jones, Esq.
 M. Lessen, Esq.
 Lincolnshire Museums
 Lubbock and Son, Ltd.
 Prof. J. P. Mass
 The late H. R. Mossop, Esq.
 Moyse's Hall Museum, Bury St. Edmunds
 Museum of London
 National Museum of Antiquities of Scotland
 National Museum of Ireland
 National Museum of Wales
 Nationalmuseet, Copenhagen
 J. J. North, Esq.
 R. Renshaw, Esq.
 N. Rhodes, Esq.
 D. Rodgers, Esq.
 Royal Mint Museum
 Royal Museum and Art Gallery, Canterbury
 Royal Museum of Scotland
 J. C. Sadler, Esq.
 B. A. Seaby, Ltd.
 D. Sellwood, Esq.
 W. Slayter, Esq.
 Spink and Son, Ltd.
 Dr I. Stewart
 Winchester City Museums
 P. Woodhead, Esq.
 Yorkshire Museum, York

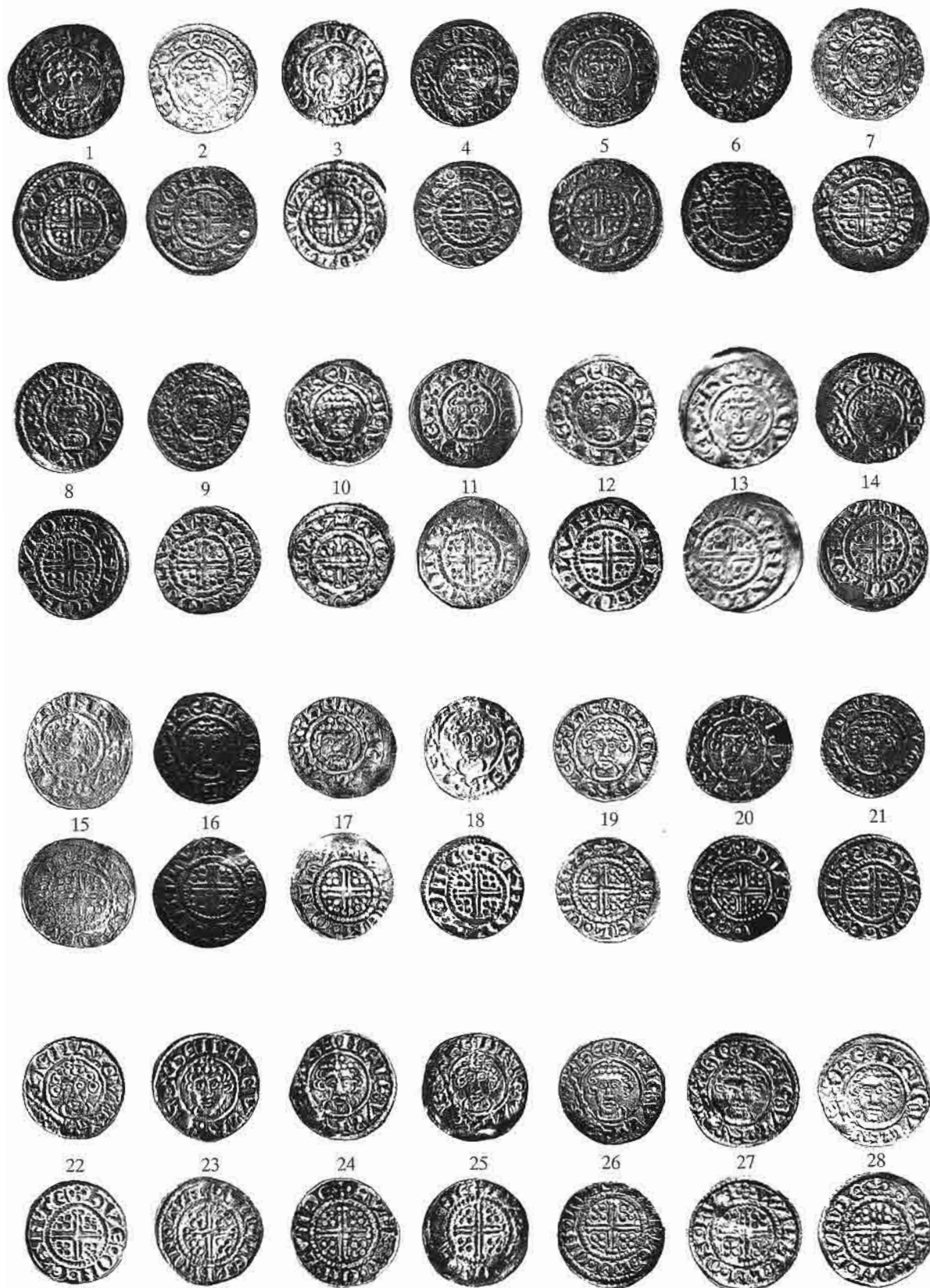
Key to the Plates

Abbreviations used:-

AM	Ashmolean Museum, Oxford	GPG	Collection of G. P. Gittoes, Esq.
BM	British Museum, Department of Coins and Medals	IS	Collection of Dr I. Stewart
BN	Bibliothèque Nationale, Cabinet des Médailles	JJN	Collection of J. J. North, Esq.
CBMAG	City of Birmingham Museums and Art Gallery	JPM	Collection of Prof. J. P. Mass
FEJ	Collection of the late F. Elmore Jones, Esq.	MRA	Author's collection
FM	Fitzwilliam Museum, Cambridge	NMA	National Museum of Antiquities of Scotland
		NMC	Nationalmuseet, Copenhagen
		PW	Collection of P. Woodhead, Esq.
		RCL	Collection of the late R. C. Lockett, Esq.
		S	Spink and Son, Ltd.

No.	Class	Mint	Moneyer	Remarks
1	IVc	Canterbury	Coldwine	JJN.
2	Vai	Canterbury	Coldwine	Large annulet eyes; same rev. die as no. 1. BM.
3	IVc	Canterbury	Roberd	JJN.
4	Vai	Canterbury	Roberd	Large annulet eyes; same rev. die as no. 3. BM.
5	Vai	Canterbury	Samuel	Same obv. die as no. 4. IS.
6	Vai	London	Fulke	Large annulet eyes; sceptre to r. of portrait; S·R. BM.
7	Vai	London	Henri	Same obv. die as no. 6. BM.
8	Vai	London	Henri	Large annulet eyes, RCL.
9	Vai	London	Henri	Same obv. die as no. 8. BM.
10	Vai	London	Ricard	Large annulet eyes, AM.
11	Vai	London	Willem	Same obv. die as no. 10. BM.
12	Vai	London	Henri	BM.
13	Vai	London	Henri	GPG.
14	Vai	London	Willelm	Same obv. die as no. 13. MRA.
15	Vai	London	Ricard	BM.
16	Vai	London	Ricard	Same obv. die as no. 15. GPG.
17	Vai	London	Willelm	RE to l. of sceptre. NMC.
18	Vai/Vaii	Canterbury	Ernaud	S·R. JJN.
19	Vai/Vaii	Canterbury	Samuel	Same obv. die as no. 18. BM.
20	Vai/Vaii	Canterbury	Hue	S·R. MRA.
21	Vaii	Canterbury	Hue	Group B obv. die; same rev. die as no. 20. BM.
22	Vaii	Canterbury	Hue	Group B obv. die; same rev. die as no. 20. NMA.
23	Vai/Vaii	London	Willelm	R. MRA.
24	Vai/Vaii	London	Fulke	MRA.
25	Vaii	London	Fulke	Group A obv. die; 2·R; same rev. die as no. 24. JPM.
26	Vaii	London	Willelm	Same obv. die as no. 25. AM.
27	Vai/Vaii	London	Willelm	2·R; same rev. die as no. 26. BM.
28	Vai/Vaii	London	Henri	Same obv. die as no. 27. BM.
29	Vaii	Canterbury	Samuel	Group A obv. die; 2·R. CBMAG.
30	Vaii	Canterbury	Coldwine	Group B obv. die. BM.
31	Vaii	Canterbury	Hue	Group B obv. die. BM.
32	Vaii	Canterbury	Iohan	Group B obv. die. BM.
33	Vaii	Canterbury	Ernaud	Group B obv. die. BM.
34	Vaii	Canterbury	Iohan	Group B obv. die. BM.
35	Vaii	Canterbury	Simon	Group B obv. die. BM.
36	Vaii	Canterbury	Coldwine	Group B obv. die. FEJ.
37	Vaii	Canterbury	Samuel	Group B obv. die. BM.
38	Vaii	Canterbury	Roberd	Group B obv. die. JPM.
39	Vaii	Canterbury	Iohan	Group C obv. die. AM.
40	Vaii	Canterbury	Samuel	Group C obv. die. FEJ.

41	Vaii	Canterbury	Simun	Group C obv. die. BM.
42	Vaii	Canterbury	Arnold	Group C obv. die. BN.
43	Vaii	Canterbury	Arnaud	Group C obv. die. BM.
44	Vaii	Canterbury	Arnaud	Group C obv. die; same rev. die as no. 43. BM.
45	Vaii	Canterbury	Roberd	Group C obv. die. BM.
46	Vaii	Canterbury	Coldwine	Group C obv. die. BM.
47	Vaii	Exeter	Gilebert	Group B obv. die. BM.
48	Vaii	Exeter	Iohan	Group B obv. die. NMC.
49	Vaii	Exeter	Ricard	Group B obv. die. BM.
50	Vaii	Lincoln	Andre	Group B obv. die. BM.
51	Vaii	Lincoln	Alain	Group B obv. die. NMC.
52	Vaii	Lincoln	Ricard	Group B obv. die. BM.
53	Vaii/Vbi	Lincoln	Rauf	Group B obv. die. BM.
54	Vaii	London	Willelm	Group A obv. die; 2-R. BM.
55	Vaii	London	Henri	Group A obv. die; 2-R. RCL.
56	Vaii	London	Henri	Group A obv. die; BM.
57	Vaii	London	Henrik	Group A obv. die; BM.
58	Vaii	London	Henri	Group B obv. die. BM.
59	Vaii	London	Ricard	Group B obv. die. BM.
60	Vaii	London	Ricard	Group B obv. die. BM.
61	Vaii	London	Henri	Group B obv. die. BM.
62	Vaii	London	Willem	Group B obv. die. BM.
63	Vaii	London	Folke	Group B obv. die. BM.
64	Vaii	London	Willem	Group C obv. die. BM.
65	Vaii	London	Willelm	Group C obv. die. NMC.
66	Vaii	London	Ricard	Group C obv. die. BM.
67	Vaii	London	Henri	Group C obv. die. BM.
68	Vaii	London	Ricard	Group C obv. die. JPM.
69	Vaii	London	Henri	Group C obv. die. BM.
70	Vaii	London	Fulke	Group C obv. die. BM.
71	Vaii	London	Henri	Group C obv. die. BM.
72	Vaii	London	Henri	Group C obv. die. S.
73	Vaii	London	Fulke	Group C obv. die. FM.
74	Vaii	London	Willelm	Group C obv. die. BM.
75	Vaii	Norwich	Iohan	Group B obv. die. JJN.
76	Vaii	Norwich	Renald	Group B obv. die. PW.
77	Vaii	Winchester	Adam	Group A obv. die. PW.
78	Vaii	Winchester	Milis	Group B obv. die. BM.
79	Vaii	Winchester	Henri	Group B obv. die. BM.
80	Vaii	Winchester	Ricard	Group C obv. die. JPM.
81	Vaii	York	Nicole	Group B obv. die. BM.
82	Vaii	York	Nicole	Group B obv. die; same rev. die as no. 81. BM.
83	Vaii	York	Davi	Group B obv. die. BM.
84	Vaii/Vbi	York	Davi	Group B obv. die. BM.



ALLEN: SHORT CROSS CLASS V (1)



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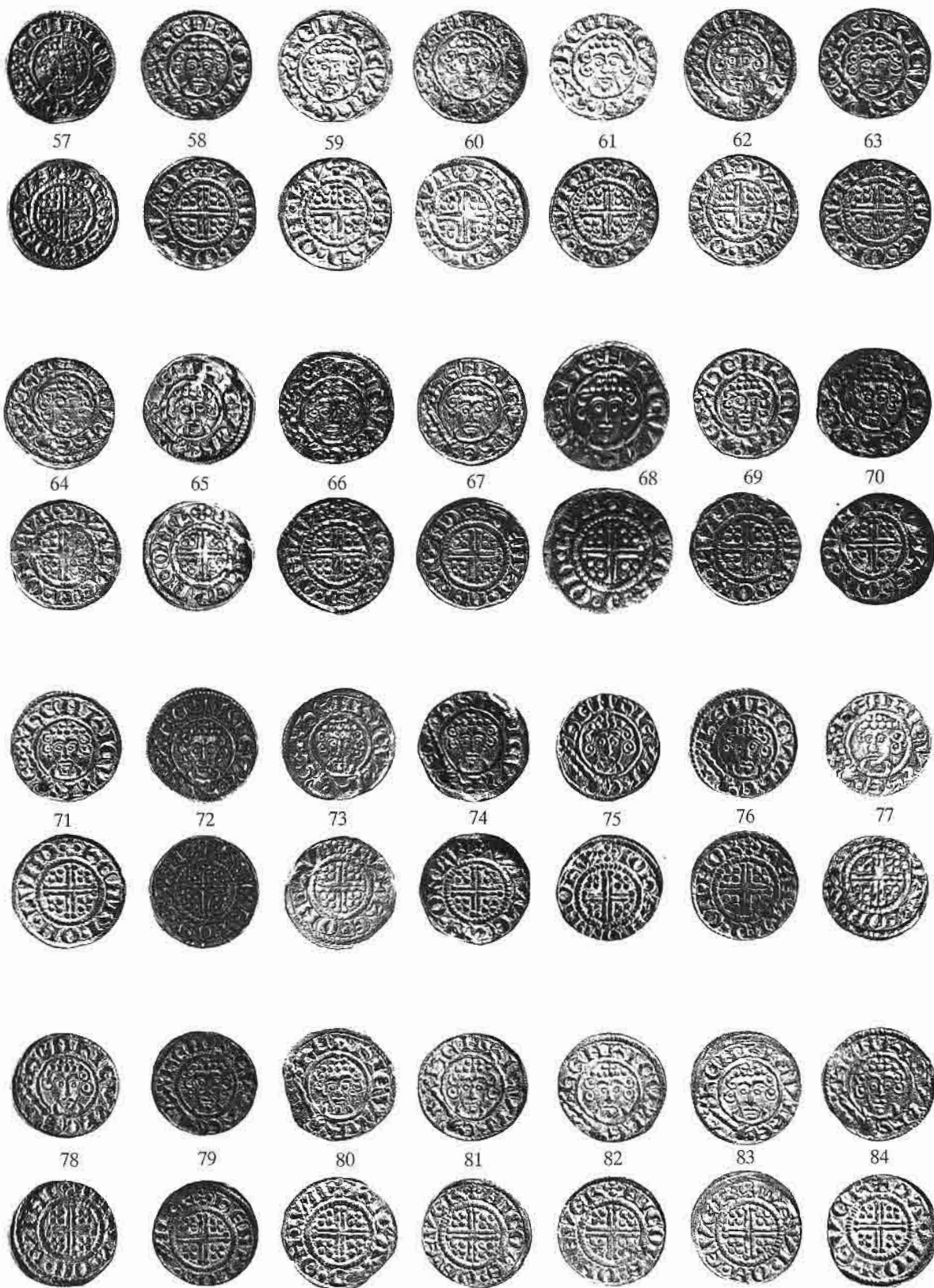


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ALLEN: SHORT CROSS CLASS V (3)

THE FOX CLASS SEVEN PENCE OF EDWARD I

D. I. GREENHALGH

WHEN H. B. Earle Fox and his brother J. Shirley Fox published their monumental work on the coins of Edward I, II and III¹ they noted that the pence of class 7 with a rose on the breast were probably issued from 1294 to 1296, with the dating of the issue being based loosely on the coins from the Canterbury mint.² Subsequent hoards and finds throw severe doubts on the dating of this issue and its position within the Edwardian series and the order has already been the subject of discussion.³ G. L. V. Tatler and B. H. I. H. Stewart in their analysis of the Montrave Hoard postulated that classes 6 and 7 were parallel issues.⁴

These anomalies encourage an examination of the coins of classes 6 and 7 in many private collections and museums. This study led to the following conclusions.

- 1 The issue from Canterbury was far greater than the Fox brothers anticipated and must therefore have been struck prior to 1294.
- 2 There are no less than seven sub-classes of class 7 and not just two as previously recognised and that class 7b precedes 7a and originates in late class 4.
- 3 That the accepted order of classes 4e, 5a, 5b, 6a, 6b, 7a, 7b, 8a, etc. with 7a and 7b being probably parallel to 6a and 6b is wrong and that the order for these classes given by Burns is nearer to the chronology of the series.⁵

The evidence for these conclusions is to be found in the dies of London and Canterbury. So far, for Canterbury, there are no less than 19 obverse dies, 11 equating to class 7a and 8 to class 7b, which would suggest amounts of bullion coined at between 1700 and 2100 pounds based on a rule of thumb that one die will strike on average 100 pounds of silver.⁶ The accounts for Canterbury⁷ for the period 1288 to 1299 show the following.

November 1288 – July 1290	=	6,357 pounds	(between 60 and 65 dies used)
July 1290 – 28 September 1291	=	910 pounds	(between 8 and 10 dies used)
29 September 1291 – 28 September 1292	=	770 pounds	(between 6 and 8 dies used)
29 September 1292 – 28 September 1293	=	740 pounds	(between 6 and 8 dies used)
29 September 1293 – 28 September 1294	=	90 pounds	(one or two dies only)
29 September 1294 – 28 September 1296	=	16 pounds	(one die only)*
29 September 1296 – 28 September 1299	=	nil	

*(The accounts for Canterbury for 1294/5 appear to be amalgamated into the next accounting period or may be missing entirely so in any analysis of these figures allowances must be made with this in mind. However the relatively small amounts of silver struck at Canterbury during this time seem to indicate that if the accounts were missing they would not alter the findings significantly.)

Acknowledgements. I wish to thank the following without whose help this study could not have been produced: Miss M. M. Archibald, The Ashmolean Museum, Mr J. W. J. Atkinson, A. H. Baldwin & Sons Ltd, the Birmingham Museum, the late Mr C. E. Blunt, the British Museum, the Fitzwilliam Museum, Galata Coins, Dr E. J. Harris, the Hunterian Museum, Mr K. Jacob, Mr N. J. Mayhew, Mr J. Morris, the National Museum of Antiquities, Scotland, Mr J. J. North, B. A. Seaby Ltd, Mr M. Sharp, Dr I. Stewart, Spink & Son Ltd, Mr C. Wood, Mr P. Woodhead.

the reigns of Edward I, II and III', *BNJ* 6 (1909), 197–212; 7 (1910), 91–142; 8 (1911), 137–48; 9 (1912), 181–206; 10 (1913), 95–123.

² Fox and Fox, *BNJ* 7, 143–4.

³ British Numismatic Society, April 1959.

⁴ G. L. V. Tatler and B. H. I. H. Stewart, 'Edwardian sterling in the Montrave hoard', *BNJ* 31 (1962), 80–7.

⁵ E. Burns, *The Coinage of Scotland* (Edinburgh, 1887), I, 186–220.

⁶ Mavis Mate, 'Coin dies under Edward I and II', *NC* 7th ser. 9 (1969), 207–218.

⁷ Fox and Fox, *BNJ* 7 (1911), 138.

¹ H. B. E. Fox and J. S. Fox, 'The numismatic history of

So the dating of the Canterbury coins to 1293 – 1296 gives a surplus of dies for the amount coined (19 when 7 to 10 should be more than adequate). Also there is a marked absence of coins from Canterbury from class 6 which the Fox brothers date by default as 1291 to 1293 where one might expect 12 to 16 dies and in fact have only one die known from a solitary specimen of Canterbury class 6 which came to light in 1977.⁸ If we consider the premise that class 6 covers the period late 1293 to 1296 then the bullion figures tie in with the one die known for Canterbury for that issue. Thus 7 must either be post-1296, which is impossible, or pre-1294 which is more likely given the estimated die numbers. The issue date is likely to fall within the period: late 1290 to late 1293.

For the London mint coins, of at least 65 obverse dies identified, 46 equate to class 7a and 19 to class 7b. The bullion figures for the London mint for pence during the same periods are as follows:-

November 1288 – July 1290	= 20,262 pounds	(approximately 200 dies used)
July 1290 – 28 September 1291	= 1,670 pounds	(between 15 and 18 dies used)
29 September 1291 – 28 September 1292	= 4,200 pounds	(between 40 and 45 dies used)
29 September 1292 – 28 September 1293	= 2,430 pounds	(between 20 and 25 dies used)
29 September 1293 – 28 September 1294	= 5,090 pounds	(between 50 and 55 dies used)
29 September 1294 – 28 September 1295	= 5,640 pounds	(between 55 and 60 dies used)
29 September 1295 – 28 September 1296	= 3,560 pounds	(between 35 and 40 dies used)
29 September 1296 – 28 September 1297	= 5,790 pounds	(between 55 and 60 dies used)

Once again if the dates given by the Fox brothers are accepted, one could expect to find in the region of 140 to 150 obverse dies, when less than half this number have been found. (It is always possible in the Edwardian series that coins can be misidentified. When it has not been possible to see the coins in person (instead relying on photographs and casts sent by the owners), it has been necessary to trust that the source collections have been correctly identified. However, with the class 7 pence, the identification being so obvious for the majority of the coins (i.e. the 'rose' on the breast and double barred Ns), it is likely that a large majority of the dies have been identified.) If once again we move the dates back to the period 1290 to 1293 we find that we can expect to find 75 to 88 dies, figures which are more realistic by far.

It is unfortunate that the bullion figures are not available for the mints of Durham or Bury St Edmunds as these coins come from only one and three dies respectively and could be crucial in the accurate dating of class 7 and also the dating of the sub-classes.

Examination of the punches used to manufacture the dies reveals that the sub-class 7b precedes sub-class 7a. The main criteria for this is the upright punch used for the letter I, N, D etc. The punch used in 7b develops a flaw which is found in a more advanced state in some dies from 7a thus proving that 7b precedes 7a. With this premise in mind, further examination of the punches and their replacement, shows that at least seven sub-classes of class 7 can be easily recognised. These are designated 7i through to 7vii and in the following table the new sub-class is listed along with the existing sub-class and North number, and the mints where each has been found.

⁸ R. S. Sharman and E. J. Harris, 'An Edward I class VI-V mule of Canterbury', *SCMB* 704 (1977), 130–1.

TABLE 1

(note Y = coins found, X = coins not found, ? = coins not found but may yet turn up)

	FOX	NORTH	LONDON	CANTERBURY	BURY	DURHAM
7i	7b	1033	Y	Y	?	Y
7ii	7b	1033	Y	?	?	?
7iii	-	-	Y	X	X	X
7iv	7a	1032	Y	Y	X	X
7v	7a	1032	Y	Y	Y	X
7vi	7a	1032	Y	Y	Y	X
7vii	7a	1032	Y	Y	?	X

The breakdown of the two Fox sub-classes into seven new sub-classes is based on the changes in the style of certain punches used in the manufacture of the dies, namely the initial cross (three styles) (**pl.7, 1-3**), the crown (two styles) (**pl.7, 4-5**), the hair (two styles), (**pl.7, 6-7**), the uprights (four styles) (**pl.7, 8-11**) and the letter S (four styles) (**pl.2, 12-15**). The following table gives the distribution of these punches in the seven sub-classes:-

TABLE 2

	I.M.	CROWN	HAIR	UPRIGHT	S
7i	1	1	1	1 & 2	1
7ii	1	1	1	1 & 2	2
7iii	1	1	2	2	1
7iv	1 & 2	2	2	2 & 3	3 & 4
7v	2	2	2	2 & 4	1
7vi	2	2	2	4	4
7vii	3	2	2	4	4

Thus it can be seen from table 2 that although it is quite a complex class, the breakdown into sub-classes is quite straightforward and individual coins can be assigned to their respective sub-classes without much trouble. Further analysis of table 2 gives further insight into the separate sub-class.

Class 7i

This is the typical early form of class 7 and is found for the mints of London, Canterbury and Durham. Coins from the mint of Bury St Edmunds are not found, but may well have been struck. The coins of London are found from ten obverse dies, all of which, barring the last, bear the classic marks of this sub-class, namely the initial cross very reminiscent of late class 4 (**pl.7, no. 1**); the typical class '7b' crown (**pl.7, no. 4**); long hair (**pl.7, no. 6**); straight

sided letter fonts occasionally found with the beginnings of a flaw or nick developing on one side of the upright punch (**pl.7, nos 8 and 9**); a single punch S found on both obverse and reverse (**pl.7, no. 12**); double barred N; and the rose on the breast. Nine of the dies in this sub-class are of this conventional style but the tenth die differs in having no rose on the breast, this may be a die-sinker's error or a die sunk for use at Canterbury. (Unfortunately this specimen is slightly clipped and it is not possible to determine if the coin has single or double-barred Ns on the obverse.)

Coins of Canterbury are found from eight obverse dies and are identical to the London coins, apart from the letter N which is only single-barred and the rose on breast which is absent on all the dies of Canterbury from this sub-class.

The Durham coin, of which there are only two specimens, mules with a class 7b obverse and a class 4 reverse, has been assigned to this sub-class as the crown, hair and portrait are certainly from this sub-class of class 7 though the letter punches are typical of late class 4. It has been postulated that this coin may be class 4 but as a coin must be classified by its latest feature, in this case the crown and portrait etc., then the die must have been sunk at least during the class 7 issue, although it may well represent a transitional form between class 4 late and class 7 which is as yet missing for London and Canterbury.

The numbers of coins examined for this sub-class are: London 21; Canterbury 12; Durham 2.

Class 7ii

This sub-class is found (as yet) only for London and is identical to 7i in all respects except that the letter S on the reverse is of the composite form (**pl.7, no. 13**) it may be that this is simply a variety of 7i but of the eight obverse dies used with these reverses none is found using a reverse of 7i with the single punch S. Again one of the dies is found without a rose on the breast, this specimen almost certainly being a London obverse owing to the presence of double barred Ns on the obverse.

The numbers examined for this sub-class are: London 13.

Class 7iii

Coins from this sub-class represent a transitional state. Whilst the crown is of the previous issues (**pl.7, no. 4**), the hair is of the short form (**pl.7, no. 7**) found on the next four sub-classes. The portrait is also of new form, being smaller and neater in style. Coins are known only from London and from one obverse only. Only two specimens are known at present, one in the British Museum from the Middridge hoard and the other in the National Museum of Antiquities in Edinburgh.

Class 7iv

This sub-class is something of an anomaly and appears to be somewhat experimental. It is known from three dies from the London mint and one die from Canterbury. Changes that mark this sub-class are a new form of crown (**pl.7, no. 5**), which is adopted from now on and is used into class 6, a new small initial cross (**pl.7, no. 2**), and a letter S (**pl.7, no. 14**) on the obverse and occasionally on the reverse which is abandoned in favour of the previous form in the next sub-class. The obverse dies used for this issue are all peculiar in some respect and deserve individual note:

Die 1. Old style initial cross, the letter 'h' is absent in HYB (3 specimens seen).

- Die 2. New style initial cross, 2 associated reverses, 1 with unbarred Ns, the other with S₃ in TAS (3 specimens seen).
- Die 3. New style initial cross, no rose on the breast (2 specimens seen).
- Canterbury die. Old style initial cross, portrait punch from 7i, mixed upright fonts (**pl.7, nos 9 and 10**) and composite S (**pl.7, no. 15**).

Class 7v

Coins from the mints of London, Canterbury and Bury St Edmunds are found for this large sub-class. There are twenty obverse dies for London, four for Canterbury and one for Bury St Edmunds. During this issue the damaged upright punch finally breaks up, and the punch for the letter S develops a flaw on the bottom curve (**pl.7, no. 10**), and is replaced in the subsequent issue by a composite form. The initial mark is of the small style (**pl.7, no. 2**), and the crown is as the previous issue (**pl.7, no. 5**). The majority of the dies have the straight-sided upright punch in various states of wear (**pl.7, nos 9 and 10**) before this is replaced by a new punch with concave sides (**pl.7, no. 11**), but these dies still retain the single punch S (**pl.7, no. 12**). This occurs on two dies which are found at the end of 7v and could be considered as transitional 7v/7vi issues.

The Canterbury coins follow the London coins closely but differ in using a composite form of letter S (**pl.7, no. 15**) on the obverse, a feature that is not found at London until the next sub-class, but they are placed in 7v by virtue of their straight-sided uprights and single punch S on the reverse. The Canterbury coins also differ from the previous Canterbury coins in that the letter N is now double-barred and there is a rose on the breast, thus bringing the design in line with the London coins.

Unlike London and Canterbury, the Bury St Edmunds coins from the solitary die attributed to this sub-class do not have the double-barred Ns or the rose on the breast. However, they do have the crown, initial mark, letter fonts, hair and portrait of the regular coins. The numbers examined for this sub-class are: London 31; Canterbury 9; Bury St Edmunds 5.

Class 7vi

The general appearance of this issue is subtly different from the preceding in that the upright punch is of concave form (**pl.7, no. 11**), and the letter S is always of composite form (**pl.7, no. 15**) on both obverse and reverse. Coins are found from London (ten obverse dies), Canterbury (five obverse dies), and Bury St Edmunds (two obverse dies), which differ from the regular London and Canterbury dies in the same points as outlined in sub-class 7v.

The numbers examined for this sub-class are as follows: London 17; Canterbury 8; Bury St Edmunds 4.

Class 7vii

This is the last issue of class 7 found for the mints of London and Canterbury. As yet no coins from Bury St Edmunds have been found. From their appearance in class 6, coins should exist, but the rarity of surviving specimens may mean that no examples from the dies have survived. A new initial cross (**pl.7, no. 3**) and a generally 'untidy' appearance to the coins are the guidelines for identification. Twelve dies are known for London and only one for Canterbury, which has a distinctive 'lopsided' appearance.

The numbers examined for this sub-class are as follows: London 26; Canterbury 4.

Class 7/6 Transitional

A note must be made at this point of two peculiar dies from London which appear to be class 7/6 transitional. One has the portrait of 7vii combined with the hair, initial mark and lettering of class 6a (3 specimens seen), and the other has the crown, portrait, hair and some letter fonts of class 7 coupled with the initial mark of class 6. Neither die has the rose on the breast (5 specimens seen).

Mules

Within class 7 several mules have been noted between the various sub-classes from the London mint, as well as mules with other classes. It is difficult to distinguish mules and counter-mules between classes 7i and 7iii and 7iv as there is little difference between the three sub-classes. Mules, if they occur, would only be distinguished by the amount of damage sustained by the upright punch. As has been stated, no mules occur with obverses of sub-classes 7i, 7ii, and 7iii. The sub-class mules found are:

7iv/7ii, 7v/7i, 7v/7ib, 7v/7iv, 7vi/7v, 7vii/7ii

The other group of mules that occur are between classes 7 and 6 and are found in the following combinations:-

7i/6b, 7vi/6a, 7vi/6b, 7vii/6a, 7vii/6b, 6a/7i, 6b/7i

The mules that occur are generally found in only one or two specimens of each mule combination. With such little evidence to work on it is difficult to draw definite conclusions from the findings, but the use of a late class 7 obverse die with class 6 reverses suggests that there is an affinity between the two classes. Also the class 7/6 transitional die mentioned above, whilst not conclusive evidence, does suggest that class 6 is a natural successor to class 7. It was mentioned by the Fox brothers that on some class 6 coins an ornament was found on the breast. Examination of this mark reveals a rose-like shape, evidence again of class 6 following on from class 7, the suggestion being that die sinkers accustomed to putting a rose on the breast could have made a mistake, or altered part-made dies.

By moving class 7 from its present position after class 6 it becomes necessary to examine class 6 in relation to class 8. There are two common features which emerge from both classes. One is the obverse legend, which as a rule ends in a contraction mark in class 6b and in class 8, a feature that is only found on one class 7 die: 7iv. The second is the small letter fonts found both on early class 8 and some class 6b dies (again a feature never found in class 7). If the Fox order of classification is correct then we have a drastic change in design from class 6 to 7 followed by reversion to the style of class 6 (the main distinction between late 6 and early 8 being the change in the crown), whereas if class 7 is deemed to predate class 6, a smooth change in design from classes 7 to 6 to 8, as would occur by the gradual replacement of punches and irons used in the production of dies, would be apparent.

Unfortunately, as seems to be the case with the Edwardian series, one problem answered leads on to another. The new order of sub-classes, 7b – 7a – 6a – 6b – 8a – 8b – 8c, leaves the problem of class 5 and its position within the classification scheme. It certainly has affinity to late class 4 by design and muling and also to class 6 by muling. Whilst the latter is no criterion for placing class 6 directly after class 5, the former case is almost conclusive, so class 5 cannot be placed anywhere other than in its present position after class 4. Yet the early class 7 (7i(b)), as shown above, seems also to follow on naturally from late 4 and though mule evidence is missing (which could be explained by the scarcity of the

existing coins), it is probable that the missing mule, or a transitional 4d or 4e/7 to match the Durham will be discovered. The problem can be partially explained if class 7 was issued in parallel with class 5 or in close proximity to class 4, in the order

5a - 5b
 4e 7i - 7ii - 7iii - 7iv - 7v - 7vi - 7vii- 6a - 6b - 8a - 8b

or

4e - 5a - 5b - 7i » 7vii- 6a - 6b - 8a - 8b

It is probable that the latter of these two arrangements is nearer to the truth because of the problems raised by the change in letter fonts from late class 5 to the subsequent issues.⁹ This arrangement is by no means new for if it is compared to the classification laid down by Edward Burns in his work on the coinage of Scotland a parallel arrangement is found:

A 28 - A 29 - A 30 - A 31 - A 32 - A 33 - A 34
 (4e) (5a) (5b) (7) (6) (8a) (8b)

This arrangement seems to reflect the available evidence, though further work is needed to settle the questions of when the issue began, the absence of the rose on the first issue of Canterbury and Durham and subsequent issues of Bury St Edmunds, and the possibility of parallel issues with class 5 or others.

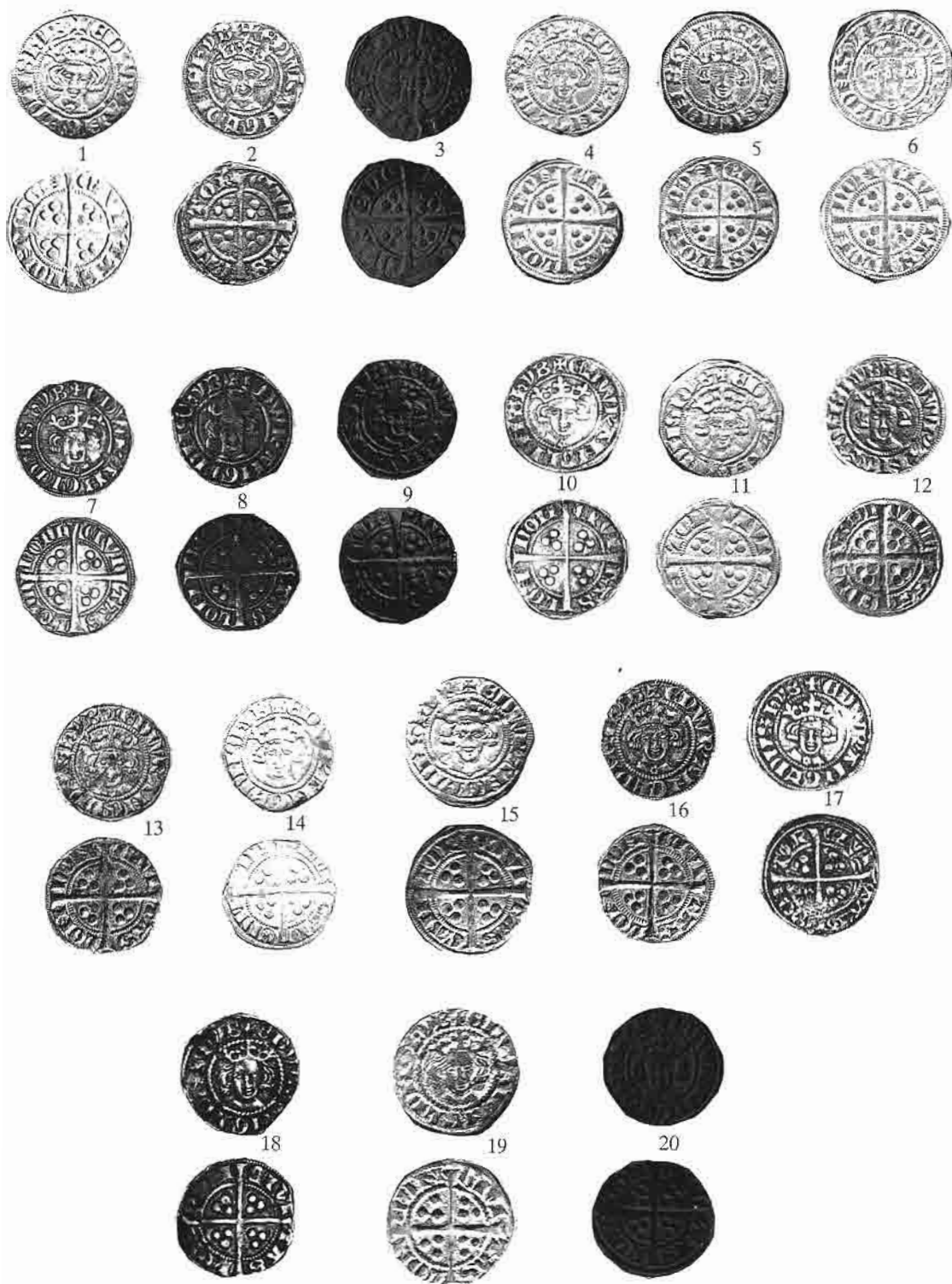
Possible explanations for the rose mark itself include the idea that it could reflect the use of West-Country silver. In May 1292 Vincent de Hilton was sent to Devon to open and work silver mines¹⁰ but as the silver mined from there did not arrive at the mint until 1296-7, the possibility of the rose mark indicating the West Country as the source of the silver is remote as this is later than proposed dates for the issue. Another argument against this theory is the amount of silver mined. This only amounted to £2,356. 13s 5d. which would only require some 20 to 25 dies and at least 30 dies bearing the rose on breast have been discovered, suggesting we must look elsewhere for the answer.

Key to plate 6

- | | |
|------------------------------|----------------------------------|
| 1. 7i, London | 11. 7v, Canterbury |
| 2. 7i, Canterbury | 12. 7v, Bury St Edmunds |
| 3. 7i, Durham (7b/4 mule) | 13. 7vi, London |
| 4. 7ii, London | 14. 7vi, Bury St Edmunds |
| 5. 7iii, London | 15. 7vi, Canterbury |
| 6. 7iv ₁ , London | 16. 7vii, London |
| 7. 7iv ₂ , London | 17. 7vii, Canterbury |
| 8. 7iv ₃ , London | 18-19. Transitional 7/6i, London |
| 9. 7iv, Canterbury | 20. Transitional 7/6ii, London |
| 10. 7v, London | |

⁹ Burns, I, 198-9.

¹⁰ Mavis Mate, 'Monetary policies in England, 1272-1307', *BNJ* 41 (1972), 72.



GREENHALGH: FOX CLASS VII (1)



1



2



3



4



5



6



7



8



9



10



11



12



13



14



15

SCOTTISH STERLINGS FROM THE MIDDRIDGE HOARD

IAN STEWART

ONE of the most important hoards of Edwardian sterlings to come to light in recent times was that found at Middridge, Co. Durham, in 1974. According to the summary in *Coin Hoards* II (1976), no. 453, the hoard contained 3072 silver coins, predominantly English, but with the usual admixture of Irish, Scottish and Continental. The latest English coins were of Fox group XI, suggesting a burial date soon after 1310. The Scottish element is stated to have consisted of 276 second coinage pennies and one halfpenny of Alexander III and three pennies of John. After the Dover hoard of 1955, which contained 344, Middridge is thus the largest source of sterlings of Alexander III's second coinage on record. The British Museum retained the Alexander halfpenny, seven sterlings of Alexander and one of John; Cleveland County Museum received three Alexander sterlings; and the Bowes Museum, Barnard Castle and the Dorman Museum, Middlesbrough one each.¹ The bulk of the coins were returned to the finders, by whom 257 sterlings of Alexander and 2 of John were sold by Glendining & Co. on 8 December 1977 (lots 806–830). Through the courtesy of the late Mr W. C. French of Glendinings and Mr Peter Mitchell of A. H. Baldwin & Sons Ltd I had the opportunity to examine the coins for a few days before they were sold at auction, and was accordingly enabled to make a detailed list.

The main reason why the Middridge hoard contained such a high proportion of Scottish sterlings is that (like the Renfrew hoard) it consisted largely of coins of the 1280s. Its English content, like its group of Alexander sterlings, is remarkably similar in scale for this period to that of the Montrave hoard, as can be seen from the following figures:

	Middridge	Montrave
<i>Scottish</i>		
Alexander III	276	242
John	3	29
<i>English</i>		
Bristol, groups II & III	165	161
London, groups I & II	279	269
London, groups III & IV	910	995
London, group V	32	37
London, group VI	16	10
London, group VII	11	18
London, group VIII	21	97
London, group IX	60	530

Sometime in the 1290s, between Fox groups V (c.1290–1) and VIII (c.1294–9), the English contents of the two hoards diverge sharply. This divergence is evident in the Scottish series from the very thin representation of coins of John Balliol (1292–6), one of which at least was considerably worn and presumably came out of currency shortly before the hoard was completed. One of the consequences of this undisturbed element from the 1280s and early

¹ I am grateful to Miss Marion Archibald for information about the coins retained for the British Museum and other museums.

1290s is that many of the Alexander sterlings and of the English coins of the earlier Fox groups are in excellent preservation, much better than is normally the case with coins from hoards buried in the fourteenth century.

For comparative purposes, I have drawn up a table of the Alexander sterlings in the Middridge hoard by Burns/Stewart classes and reverse types (table 1), and a table of those in six other hoards – Bootham, Boyton, Broughton, Dover, Loch Doon and Renfrew² – on the same basis (table 2). Table 3 combines the figures for the seven hoards. These tables give a useful indication of the frequency of occurrence of the different varieties and show the Middridge hoard to be broadly representative. The top line in the tables gives the Burns classes and combinations. In the second and fourth lines I have given the Stewart equivalents for Burns groups I and II respectively.³ At the risk of further confusion I have redesignated Stewart class I as class J, for two reasons: the letter I may be confused with the group and two classes to which Burns gave the Roman numeral I, and J is a useful means of indicating the nature of these coins, which are of the same style and fabric as the first coinage of John Balliol. I have also introduced a new class, not hitherto differentiated, which I have labelled R (from one of its most readily identifiable features), so as not to prejudice its position or relationship to the rest of the series.

Where an entry is left blank in the tables, no specimen of the relevant description is known to me. Where nought occurs, it indicates that the variety is known but that no specimen was present in the hoard(s) concerned. In a few cases the entries in table 2 (and consequently also in table 3) may be incorrect because the six hoards were recorded before some of the details of the series had become fully apparent. With the 23 point reverse two coins from Dover and one from Broughton were listed as B. III/I (S.FG/D), because of the apparent waisted C on the reverse; but further study has persuaded me that a slight bulbousness of this letter sometimes occurs on III (FG) reverses, which differs from the characteristic form on I (D) reverses. Since the lettering on the reverse of these coins otherwise conforms with that normal in III (FG) I have reclassified them in table 2 accordingly. I have never seen an unequivocal example of III/I (FG/D) with the 23 point reverse. I have removed Dover no. 402 from I/III (D/FG), as it was there described, since it is in fact a specimen of the then unrecognised class R. This class is characterised by large lettering of which the A, boldly barred at the top and bottom, and the disjointed R are useful indicators, the latter especially, since it occurs on both sides of the coin. The class is represented by true coins only with 24 point reverse (no. 132), but mules with obverses of other classes of B. group II are also found: II(E)/R, with 23 point reverse (nos 154–7), and III (FG)/R with 24 point reverse (no. 133).

It is odd that there should have been as many as four specimens of E/R in the Middridge hoard. I only have record of one other specimen, but since the variety was not previously distinguished further specimens may have occurred in earlier hoards and not been identified. The same is of course true of the other R varieties, as Dover 402 illustrates. Middridge had five examples of the coins with anomalous obverses (H), against only three in the other six hoards. It had nineteen of the scarce coins combining D obverses with 25 point reverses, against only fourteen in the other six hoards. But in contrast, it had only six of the much more abundant coins combining D obverses with 26 point reverses (the other hoards had 37). Such differences indicate that, although the Scottish element of Edwardian hoards was quite well mixed by the 1310s, it was as yet still not thoroughly so.

Several coins are of individual interest. Nos 132–3 and 154–7 have been noted above as involving dies of the new class R. No. 202 is the first coin to be recorded as combining an

² Bootham, *BNJ* 27 (1952–4), 281–93; Boyton, *NC* 5th ser. 16 (1936), 115–55; Broughton, *BNJ* 35 (1966), 120–7; Dover, *BNJ* 28 (1955–7), 149–68; Loch Doon, *BNJ* 38

(1969), 31–49; and Renfrew, *BNJ* 35 (1966), 128–47.

³ *The Scottish Coinage* (2nd edn London, 1967), p. 135.

obverse of class H with a 25 point reverse. Nos 39–42 (D/FG) with 24 points, nos 179–80 (D/E) with 25 points and no. 270 (FG) with 28 points are varieties not recorded by Burns.

No. 269, a coin of class E with 28 point reverse, is from an obverse die with the error reading ERA for GRA. This die has also been noted on a coin (Stewart) with 25 point reverse and is, I believe, the first example of an obverse die in this coinage to be noted as having been used in conjunction with reverses with different numbers of points, apart from the anomalous obverse dies of class H. It could either represent a die-link between mints; or the use of a reverse die at the wrong mint (as happened with a ‘Canterbury’ die of Edward I or II on a coin in the Mayfield hoard);⁴ or, conceivably, an argument against the whole theory, accepted by all numismatists since Burns, that the variation in stars and mullets on the reverses of Alexandrian sterlings was designed to differentiate between the products of different mints opened for the Scottish equivalent of the English recoinage of 1279. Further evidence is needed before we can judge which of these possibilities seems most likely.⁵

The following coins were retained for public collections:

British Museum	1 of nos 4–16, 1 of nos 17–21, no. 38, 1 of nos 181–8, no. 202, 1 of nos 203–6, 1 of nos 263–4, no. 271 and no. 272.
Bowes Museum Cleveland County Museum	1 of nos 146–53.
Dorman Museum	1 of nos 53–80, 1 of nos 181–8 and 1 of nos 253–61.
	1 of nos 4–16.

List of Scottish Coins from the Middridge Hoard

Alexander III, 2nd Coinage, *sterlings*

Reverse with 24 points (4 mullets of 6 points) – 135 coins

1.	S. class A (B. group I, class II). Same dies as B. fig. 147A.	1
2.	S. class A/C mule (B. I, II/III), G'RA.	1
3.	–, DEI:GRA.	1
4–16.	S. class B (B.I, I)	13
17–21.	B/C mules (B. I, I/III)	5
22–33.	S. class C (B. I, III). One has cross potent on obv.; another, a stop before DEI, GRA:, and SEO; another GRA:; and another REX'. (A few of these could be S. class FG (B. II, III) but the head is not always clear.)	12
34.	S. class C/A mule (B. I, III/II). Rev. reads REX (X over O ?) SCO T:TO RVM	1
35–7.	C/B mules (B. I, III/I)	3

⁴ M. M. Archibald, ‘The Mayfield (Sussex) 1968 Hoard of English Pence and French Gros, c.1307’, *Mints, Dies and Currency*, edited by R. A. G. Carson (London, 1971), pp. 151–9 (at p. 153); in the same volume (pp. 212 and 272) I have suggested that a die of Alexander III’s long voided cross coinage with the mint signature *Dun* was in fact used at Edinburgh.

⁵ In collaboration with Mr J. J. North I hope in due course to publish a new analysis of the Alexander single-cross sterlings which will address this and several other problems that have become apparent in the arrangement of the series, and a number of unusual coins from the Middridge hoard will be illustrated in that context.

TABLE 1 Scottish Sterlings of Alexander III in the Middridge Hoard

Burns Classes	I	I/II	I/III	II	II/I	II/III	III	III/I	III/II	III/I,I								Total	
GROUP I (Stewart)	B	B/A	B/C	A	-	A/C	C	C/B	C/A										
All 24 pts. (4×6)	13	0	5	1		2	12	3	1										37
GROUP II (Stewart)	D	D/E	D/FG	E	E/D	E/FG	E/R	FG	FG/D	FG/E	FG/B	FG/R	R	H/D	H/E	H/FG	J		
20 pts. (4×5)				10														10	
21 pts. (3×5, 1×6)						0		0										0	
22 pts. (2×5, 2×6)		0		0														0	
23 pts. (1×5, 3×6)				8			4	12										24	
24 pts. (4×6)	0	1	4	6	0	4		40	11	25	3	1	1	0	0	2	0	98	
25 pts. (3×6, 1×7)	9	2	8	0	2	3		3	5	0						1		33	
26 pts. (2×6, 2×7)	4	2		13	17	2		2	9	11					2			62	
27 pts. (1×6, 3×7)				0														0	
28 pts. (4×7)		1		4				1										6	
Total group II	13	6	12	41	19	9	4	58	25	36	3	1	1	0	2	3	0	233	
Total, both groups	26	6	17	42	19	11	4	70	28	37	3	1	1	0	2	3	0	270	

TABLE 2 Scottish Sterlings of Alexander III in the Bootham, Boyton, Broughton, Dover, Loch Doon and Renfrew Hoards

Burns Classes	I	I/II	I/III	II	II/I	II/III	III	III/I	III/II	III/I,I								Total	
GROUP I (Stewart)	B	B/A	B/C	A	-	A/C	C	C/B	C/A										
All 24 pts. (4×6)	44	1	22	3		1	57	17	1										146
GROUP II (Stewart)	D	D/E	D/FG	E	E/D	E/FG	E/R	FG	FG/D	FG/E	FG/B	FG/R	R	H/D	H/E	H/FG	J		
20 pts. (4×5)				31														31	
21 pts. (3×5, 1×6)						1		1										2	
22 pts. (2×5, 2×6)		0		2														2	
23 pts. (1×5, 3×6)				11			0	16										27	
24 pts. (4×6)	8	6	6	24	0	1		126	20	39	2	0	1	0	0	3	1	237	
25 pts. (3×6, 1×7)	9	0	5	0	2	7		12	13	5						0		53	
26 pts. (2×6, 2×7)	28	9		35	31	8		4	16	20					0			151	
27 pts. (1×6, 3×7)				0														0	
28 pts. (4×7)		0		6				1										7	
Total group II	45	15	11	109	33	17	0	160	49	64	2	0	1	0	0	3	1	510	
Total, both groups	89	16	33	112	33	18	0	217	66	65	2	0	1	0	0	3	1	656	

TABLE 3 Scottish Sterlings of Alexander III in Seven Hoards (Tables 1 and 2 combined)

Burns Classes	I	I/II	I/III	II	II/I	II/III		III	III/I	III/II	III/I.I							Total
<i>GROUP I (Stewart)</i>	B	B/A	B/C	A	-	A/C		C	C/B	C/A								
All 24 pts. (4×6)	57	1	27	4		3		69	20	2								183
<i>GROUP II (Stewart)</i>	D	D/E	D/FG	E	E/D	E/FG	E/R	FG	FG/D	FG/E	FG/B	FG/R	R	H/D	H/E	H/FG	J	
20 pts. (4×5)				41														41
21 pts. (3×5, 1×6)						1		1										2
22 pts. (2×5, 2×6)		0		2														2
23 pts. (1×5, 3×6)				19			4	28										51
24 pts. (4×6)	8	7	10	30	0	5		166	31	64	5	1	2	0	0	5	1	335
25 pts. (3×6, 1×7)	18	2	13	0	4	10		15	18	5						1		86
26 pts. (2×6, 2×7)	32	11		48	48	10		6	25	31					2			213
27 pts. (1×6, 3×7)				0														0
28 pts. (4×7)		1		10				2										13
<i>Total group II</i>	58	21	23	150	52	26	4	218	74	100	5	1	2	0	2	6	1	743
<i>Total, both groups</i>	115	22	50	154	52	29	4	287	94	102	5	1	2	0	2	6	1	926

38.	S. class D/E mule (B. II, I/II)	1
39–42.	S. class D/FG mules (B. II, I/III)	4
43–8.	S. class E (B. II, II)	6
49–52.	S. class E/FG mules (B. II, II/III)	4
53–80.	S. class FG (B. II, III), Burns 1st. and 2nd. heads	28
81–92.	–, Burns 3rd. head	12
93–5.	S. class FG/B mules (B. II, III/I, I), one with plain cross on rev. (same dies as Dover 482)	3
96–7.	S. class FG/D mules (B. II, III/I), Burns 1st. or 2nd. heads	2
98–106.	–, Burns 3rd. head, one with plain cross on rev.	9
107–22.	S. class FG/E mules (B. II, III/II), Burns 1st. and 2nd. heads	16
123–31.	–, Burns 3rd. head	9
132.	New class (R), see Dover 402	1
133.	Mule with reverse of class R, as preceding, and obv. of class FG (B. II, III), 1st. or 2nd. head	1
134–5.	S. class H (anomalous obverses, with rev. of S. class FG, B. II, III), both read GRA	2
<i>Reverse with 20 points</i> (4 mullets of 5 points), all of Burns group II – 10 coins		
136–45.	S. class E (B. II), one without stop on obv. or points on rev., 4 with stop before ER and without points on rev., 5 with stop before ER, one point in 2nd. quarter, and two points in 4th quarter.	10
<i>Reverse with 23 points</i> (1 mullet of 5 pts and 3 of 6), all of Burns group II – 24 coins		
146–53.	S. class E (B. II)	8
154–7.	Mules with obv. of class E and rev. of new class R	4
158–69.	S. class FG (B. III), Burns 3rd. head	12
<i>Reverse with 25 points</i> (3 mullets of 6 points, 1 star of 7), all of Burns group II – 33 coins		
170–8.	S. class D (B. I), one with plain cross on reverse	9
179–80.	S. class D/E mules (B. I/II)	2
181–8.	S. class D/FG mules (B. I/III), 4 with unusual head (see B. fig. 164)	8
189–90.	S. class E/D mules (B. II/I), one with plain cross on rev.	2
191–3.	S. class E/FG mules (B. II/III)	3
194–6.	S. class FG (B. III), 1st. or 2nd. heads	3
197–201.	S. class FG/D mules (B. III/I), 2nd. head, one with plain cross on rev.	5
202.	S. class H (anomalous obv. with B. III rev.), GRA	1

Reverse with 26 points (2 mullets of 6 points, 2 stars of 7), all of Burns group II – 62 coins (All with stars in *Rex* and *Tor* quarters unless otherwise stated.)

203–6.	S. class D (B.I)	4
207.	S. class D/E mule (B. I/II)	1
208.	–, with mullets in <i>Rex</i> and <i>Tor</i> quarters	1
209–21.	S. class E (B. II)	13
222–38.	S. class E/D mules (B. II/I)	17
239–40.	S. class E/FG mules (B. II/III), with mullets in <i>Rex</i> and <i>Tor</i> quarters.	2
241–2.	S. class FG (B. III), Burns 3rd head, with mullets in <i>Rex</i> and <i>Tor</i> quarters.	2
243–5.	S. class FG/D mules (B. III/I), Burns 2nd head	3
246–51.	–, 3rd head	6
252.	S. class FG/E mule (B. III/II), Burns 2nd. head	1
253–61.	–, 3rd head	9
262.	–, –, with mullets in <i>Rex</i> and <i>Tor</i> quarters (rev. die same as Dover 629)	1
263–4.	S. class H (anomalous obv. with B. II rev.), GRAC	2

Reverse with 28 points (4 stars of 7 points), all of Burns group II – 6 coins

265.	S. class D/E mule (B. I/II), unusual face (cf. Burns fig. 163B)	1
266–8.	S. class E (B. II)	3
269.	–, reads ERA for GRA	1
270.	S. class FG (B. III)	1

Halfpenny

271.	2 mullets of 6 points (illustrated <i>Coin Hoards</i> II, fig. 26, no. 17)	1
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John Balliol, sterlings

272.	1st (rough) issue, <i>Rex Scotorum</i>	1
273–4.	2nd (smooth) issue, <i>Rex Scotorum</i>	2

NOTES ON THE GOLD COINAGE OF ELIZABETH I

I. D. BROWN and C. H. COMBER

I. Introduction

THE gold coinage of Elizabeth I is a much neglected series. The account given by Kenyon in 1884 even with Montagu's additions of 1895 is incomplete and contains confusing errors.¹ More recent listings in the standard works of Brooke, North, and Seaby are more accurate but rather brief.² The latter two further suffer from inappropriate attempts to divide the series into different issues. Whitton gave the most accurate and well referenced check list of the known coins.³ The milled gold coins have been described by Borden and Brown.⁴ Only Kenyon and Brooke attempted to set the coinage in the context of the documented history of the mint which has been the subject of works by Ruding, Symonds, Craig, and Challis.⁵ In view of the increase in our understanding of the workings of the Elizabethan mint in recent years a review of this coinage is overdue.

II. Numismatic History

The coinage has been divided into three issues in accordance with the scheme proposed by one of us in an earlier article.⁶

First (Tentative) Issue (1558–1572)

On 31 December 1558 Elizabeth I issued a commission to Sir Edmund Peckham authorising him to strike sovereigns (30/-), angels (10/-) and half-angels in fine gold (995 fine) and pounds (20/-), half-pounds, crowns (5/-) and half-crowns in crown gold (917 fine). Mary had struck only fine gold. Crown gold, which was a product of Henry VIII's debasement, had last been issued by Edward VI. Initially very little crown gold was struck but within four years it had entirely displaced fine gold in the mint output presumably because its better wearing qualities commended it to the merchants. An indenture was signed on 8 November 1560 with Thomas Stanley establishing the terms of the silver recoinage. This indenture also authorised Stanley to strike sovereigns (30/-), ryals (15/-), angels (10/-) and half-angels in fine gold and pounds (20/-), half-pounds, crowns (5/-) and half-crowns in crown gold but no ryals or pounds (apart from some rare pattern pounds with privy mark rose) were apparently struck during the term of this indenture.

On 24 October 1561 Stanley's fine and crown gold were pyxed along with the recoinage silver. Subsequently new denominations were issued in silver according to a proclamation dated 15 November 1561 (the commission authorising the change is now lost) and they bore the privy mark broad arrow head (pheon).⁷ Since no gold coins are known with this

¹ R. L. Kenyon, *Gold Coins of England* (London, 1884), pp. 121–135; H. Montagu, 'Unpublished gold coins of Elizabeth', *NC* 3rd Ser. 15 (1895), 165–166.

² G. C. Brooke, *English Coins* (London, 1932); J. J. North, *English Hammered Coinage*, Vol. 2 (London, 1960); Seaby's *Standard Catalogue of British Coins*, 24th Edition (London, 1989).

³ C. A. Whitton, 'Elizabeth's hammered gold', *NCirc* 55, (1949), 58.

⁴ D. G. Borden and I. D. Brown, 'Milled coinage of Elizabeth I', *BNJ*, 53 (1983), 108–132.

⁵ R. Ruding, *Annals of the Coinage of Britain and its Dependencies* (London, 1817); H. Symonds, 'The mint of queen Elizabeth and those who worked there', *NC*, 4th ser. 16 (1916), 61–105; J. Craig, *The Mint* (Cambridge 1953); C. E. Challis, *The Tudor Coinage* (Manchester, 1978).

⁶ I. D. Brown, 'A classification of the coinage of Elizabeth I', *NCirc* 92, (1984), 116.

⁷ *Tudor Royal Proclamations*, Edited by P. L. Hughes and J. E. Larkin (New Haven and London, 1964–9) Vol. 2, Proclamation 487.

mark it had previously been assumed that no gold was struck between October 1561 and October 1565, the period when this mark was in use on the silver. However, the mint records show that £112,466 was struck in crown gold and £686 in fine gold during this period. This large issue must have been marked with either a cross crosslet or a rose (the mark which directly follows cross crosslet on the gold and which was introduced on the silver in October 1565). Although the pyxing of cross crosslet gold in October 1561 suggests that the mark should have been changed at that time, no fine gold coins are known with the mark rose and the cross crosslet crown gold coins are themselves so common that they must represent an issue much larger than the £3812 struck before October 1561. Furthermore the bust punch used on the half-pound undergoes a deterioration during this period which allows an approximate dating of individual dies. Examination of the coins suggests that the bulk of the cross crosslet half-pounds were struck after the last cross crosslet shillings were produced in the early summer of 1561. The only reasonable conclusion is that the cross crosslet mark was used on the gold for some years after it had been superseded on the silver. This conclusion is supported by the analysis of sales records described below and the existence of several dies with the privy mark rose stamped over cross crosslet. The proclamation of 15 November 1561 did not mention any changes in the gold and subsequent issues were almost entirely restricted to crown gold in the previously authorised denominations. There was, however, an issue of fine gold struck between July 1567 and February 1570 that probably included the quarter-angel which had not previously been authorised. It might therefore have been the subject of a special commission that is now lost. The comparative scarcity of surviving coins from what was a relatively large issue of fine gold suggests that these coins may have been struck for some special purpose and that most were subsequently melted down or exported to pay a foreign debt.

Between 1561 and 1568 Eloye Mestrelle operated a mint in the Tower which produced gold (and silver) coins by machinery. These coins are differentiated from the regular issues not only by their superior quality but by the use of different mint marks (star and lis) and a design which omits the inner beaded circle. All of the lis gold coins have serrated edges, one of the first attempts to produce a security edge on coins. Mestrelle's coinage and the events surrounding his time at the Tower mint have been described by Borden and Brown.

Second (Restoration) Issue (1572–1593)

Stanley's death on 15 December 1571 provided an opportunity to restructure the administration of the mint and to make changes in the gold coinage in order to restore it to the pre-1524 standard as had been done in 1561 with the silver. An indenture was signed on 19 April 1572 with John Lonison for the issue of angels, angelets (half-angels) and quarter-angels in fine gold. With the reintroduction of these denominations in the gold, the coins being produced at the mint were identical in weight and fineness with the predebasement coins of Henry VIII. Only their valuations in money of account was different (they were valued at 50 per cent above their original values). On 1 November 1577 Lonison was also commissioned to produce sovereigns of 30/- and ryals of 15/- in fine gold but none appear to have been struck. The commission expired on 15 September 1578 when a slightly debased fineness (992) was introduced in an attempt to improve mint efficiency. This reduction in standard was effected by a series of short term commissions which are summarized by Challis.⁸ The changes are small and are not indicated by visible changes in either the fabric or design of the coins themselves. Opportunity was taken in

⁸ C. E. Challis, p. 323.

1583 to rationalise the silver denominations when a new indenture was signed with Richard Martin on 30 January 1583 but the gold coinage remained unchanged in this indenture except that the traditional 995 fine standard was once again restored.

In order to finance the expedition of the earl of Leicester to the Netherlands in 1585, the Government issued a privy seal warrant on 20 April 1584, authorizing the striking of nobles (15/- = ryal) and double nobles (30/- = sovereign). English nobles had long been widely accepted as a standard currency in the Netherlands and were subject to extensive copying there. They therefore provided the natural medium for financing the British expedition. Between 3 May 1584 and 31 January 1587 the sum of £27936 was struck in these two denominations,⁹ a small issue consisting of about 3,000 nobles and 15,000 double nobles (compare these figures with the issue of about 100,000 angels during the same period). Leicester also apparently struck some of these coins in Amsterdam using the regular London dies but unofficial imitations with irregular legends were also produced in the low countries. This coinage and its background was described in detail by Thompson, and Ives gave an interesting account of the Dutch imitation nobles.¹⁰ The treatment of the throne decoration on the double nobles was the subject of a paper by Whicher.¹¹

Third (Rationalised) Issue (1593–1603)

The third issue was initiated by a new indenture with Richard Martin signed on 10 June 1593 which authorised the issue of crown gold coins in the denominations of 20/- (pound), 10/-, 5/- (crown) and 2/6. Since the silver continued to be struck under the terms of the old indenture we may assume that this was also his authority to continue striking fine gold, a view confirmed by the woolpack pyx which mentions all the five previously authorised fine gold denominations although only the angel and its fractions appear to have been struck after the end of the tun mark. The reason for the reintroduction of the crown gold standard is not known but we may surmise that it was demand from the merchant community requiring a better wearing coin.

In 1601 a new indenture was signed with Sir Thomas Knyvet which reduced the weights of all denominations. Authority was given to strike angels, half-angels and quarter-angels in fine gold and pounds, half-pounds, crowns and half-crowns in crown gold. The half and quarter-angels are not known and the smaller crown gold denominations are rare.

III. Analysis

Challis summarises the various indentures and commissions which authorised the striking of the coins and he gives a detailed breakdown of the quantities of gold coined at different periods during the reign.¹² From this it is usually possible to estimate the size of the issue bearing a given privy mark. However there are ambiguities and these have been resolved in two ways. The first involves reference to the records of the pyx trials published by Symonds.¹³ About one coin in every 300 struck was set aside in the pyx and was later tested to ensure that it met the required standards of weight and fineness. A knowledge of the size of the pyx can thus be used to estimate the size of the coinage from which it was drawn. The second method involves the use of records of coins offered for sale. A detailed analysis of Seaby's *Coin and Medal Bulletin* from 1937–1983 and Spink's *Numismatic Circular* from

⁹ Although these denominations continued to be minted until at least 1592, the majority of the coins were struck before 1587.

¹⁰ J. D. A. Thompson, 'Elizabethan ryals and their dutch imitations', *NC*, 6th ser. 1 (1941), 139–168; H. E. Ives, *Foreign Imitations of the English Noble*, *NNM* 93 (ANS,

New York, 1941).

¹¹ S. Whicher, 'Types of throne treatment on the "fine" sovereigns of Elizabeth during the period 1584 to 1597', *NCirc* (April 1938).

¹² C. E. Challis, p. 307–8.

¹³ H. Symonds, p. 61–105.

31 Dec. 1558	Denominations authorized	30/- (Sovereign)	Fine AU 10/- (Angel)	5/-	20/- (pound)	Crown AU 10/- (crown)	5/- (crown)	2/6
<i>Rose</i> 1 Oct. 1565– 31 Mar. 1566	Crown AU	£32 634			Pattern	(17)	(7)	(10)
<i>Porcullis</i> 1 May 1566– 31 Jan. 1567	Crown AU	£15 373				(8)	(0)	(2)
<i>Lion</i> 1 Feb. 1567– –30 June 1567	Crown AU	£6 850				(11)	(1)	(3)
1567 (?)	(Authorisation not known)		10/-	5/-	2/6			
<i>Coronet</i> 1 July 1567– 28 Feb. 1570	Fine AU (–30 Sept 1569) Crown AU	£12 026 (£42 671)	(3)	(0)	(2)			
<i>Lis</i> (mill coin) 14 Feb. 1567– 1 Sept. 1568	Crown AU	(£ 6 000)				(22)	(10)	(17)
<i>Castle</i> 1 Mar. 1570– 15 Dec. 1571	Crown AU	(£14 200)				(32)	(3)	(1)
						(7)	(3)	(3)

Second (Restoration) Issue

19 April 1572	Denominations authorized			10/- (Angel)	5/-	2/6
<i>Ermine</i> 19 April 1572– 30 Oct. 1573	Fine AU	£21 022		(19)	(8)	(3)
<i>Acorn</i> 1 Nov. 1573– 25 May 1574	Fine AU	£8 143		(9)	(4)	(11)
<i>Eglantine</i> 29 May 1574– 30 July 1578	Fine AU	£14 525		(7)	(20)	(17)
<i>Cross</i> 1 Oct. 1578– 17 May 1580	Fine AU	£20 261		(16)	(5)	(11)
<i>Long Cross</i> 1 June 1580– 31 Dec. 1581	Fine AU	£33 517		(18)	(0)	(6)
<i>Sword</i> 23 July 1582– 31 Jan. 1583	Fine AU	£35 697		(18)	(6)	(5)
<i>Bell</i> 1 Feb. 1583– 29 Nov. 1583	Fine AU	(£34 977)		(20)	(8)	(8)

20 April 1584	Additional denominations authorized		30/- (double noble)	15/- (noble)	10/- (angel)	5/-	2/6
<i>A</i> 1 Dec. 1583– 13 Feb. 1585	Fine AU	(£44 558)	(3)	(3)	(48)	(12)	(9)
<i>Scallop</i> 14 Feb. 1585– 30 May 1587	Fine AU	£56 562	(74)	(12)	(19)	(8)	(16)
<i>Crescent</i> 1 June 1587– 31 Jan. 1590(?)	Fine AU	£46 973	(7)	(0)	(34)	(2)	(12)
<i>Hand</i> 1 Feb. 1590(?)– 31 Jan. 1592(?)	Fine AU	£40 778	(1)	(0)	(24)	(7)	(3)
<i>Tun</i> 1 Feb. 1592(?)–	Fine AU	(£12 000)	(41)	–	(12)	(0)	(10)
<i>Third (Restoration) Issue</i>							
10 June 1593	Additional denominations authorized		(30/- 15/- Fine AU 10/- (angel)	5/- 2/6)	20/- (pound)	Crown AU 10/- 5/- (crown)	2/6
<i>Tun</i> 10 June 1593– 8 May 1594	Fine AU	(see above)	(see above)				
	Crown AU	(£28 009)			(42)	(56)	(12) (7)
<i>Woolpack</i> 9 May 1594– 13 Feb. 1596	Fine AU	(£2 652)	–	–	–		
	Crown AU	(£42 739)			(65)	(32)	(4) (15)
<i>Key</i> 14 Feb. 1596– 7 Feb. 1599	Fine AU	(£14 167)	(0)	(0)	(0)		
	Crown AU	(£13 981)			(25)	(5)	(2) (2)
<i>Anchor</i> 8 Feb. 1599– 30 April 1600	Fine AU	(£3 067)	(0)	(0)	(0)		
	Crown AU	(£14 098)			(4)	(0)	– –
<i>Cypher</i> 1 May 1600– 20 May 1601	Fine AU	(£5 000)	(11)	–	–		
	Crown AU	(£26 477)			(34)	(1)	(2) (1)
29 July 1601	Denominations Authorized		10/- (angel)	5/- 2/6	20/- (pound)	10/-	5/- (crown) 2/6
<i>One</i> 29 July 1601– 14 May 1602	Fine AU	(£292)	(1)	–	–		
	Crown AU	(£14 737)			(27)	(3)	(0) (1)
<i>Two</i> 15 May 1602– 24 Mar. 1603	Fine AU	(£1 000)	(5)	–	–		
	Crown AU	(£7 000)			(14)	(0)	(0) (0)

IV. Notes to Table 1

Lis (Hammered). Gold coins were struck with this mark until 31 July 1560 and six of the seven authorised denominations are known, the exception being the pound. Only a few thousand pieces of the crown gold were struck, the bulk of the issue being of fine gold angels. Two varieties of the angels are known, those having only a wire line inner circle and those having the beaded inner circle that was standard for the rest of the reign. No record remains of the pyx of these coins which was presumably held in August 1560. No gold coins with the lis mark were struck after this date and no gold coins of this mark were included in the pyx of 24 October 1561 which did include lis mark silver coins struck between August and October 1560. In an earlier paper one of us suggested that the silver coins from this second pyx were those bearing the inner beaded circle and that the coins from the presumed pyx of August 1560 were those without the beaded inner circle.¹⁴ Since no lis marked gold coins were included in the later pyx but the majority have the beaded inner circle, this theory is no longer tenable. The inclusion of coins with the same mark in two pyxes held at different times is unusual but appears also to have occurred with the gold cross crosslet coins (see above) and with the silver mill coins with the star mark, though unfortunately in none of these cases are both pyxes documented. The beaded inner circle was probably added early in 1560, consistent with the observation that the silver lis coins with the beaded inner circle are more common than those with only the wire line circle.

Cross Crosslet. The mintage accounts for the cross crosslet mark are divided into three periods as follows:

	Fine AU	Crown AU
1 Dec. 1560–31 Oct. 1561	£6469	£3812
1 Nov. 1561–31 Oct. 1562	686	75133
1 Jan. 1563–31 Aug. 1565		37333

This sum presumably also includes the mill coin with privy mark star and this has been allowed for in estimating the size of the cross crosslet issue. The pyx of 24 October 1561 contained £19.15.0 in fine gold in pieces of 30/- and 15/- (sic) and £10.10.0 in crown gold in pieces of 20/-, 10/-, 5/- and 2/6. The mention of 15/- and 20/- means only that these denominations were authorised, not that they were necessarily represented in the pyx, but the pyx must also have included angels and half-angels since the sum of £19.15.0 cannot be made up only of pieces of 30/-. A second pyx must have been held later in 1565 since cross crosslet coins were not mentioned in the pyx that included the broad arrow head silver (13 February 1567).

Star (Mill). Coins with this mark were struck by Eloye Mestrelle using machinery. They are round and well struck and lack the inner beaded circle found on the regular coinage. There is no record of the indenture with Mestrelle, nor of the pyx which may have taken place in 1565 at the same time as the presumed second cross crosslet pyx. The estimate of the size of this issue is based on the sales record on the assumption that £2,000 was issued for every £5 in the sales record.

Rose and Portcullis. These coins were pyxed on 13 February 1567.

Lion. These coins were pyxed with those of privy mark coronet on 13 February 1571.

*Coronet.*¹⁵ The estimated crown gold issue of £42,671 is based on the known combined issue of £62,871 for the coronet, castle and lis (mill) marks and the relative frequency of the coins in the sales record. Coronet coins were pyxed on 13 February 1571 together with those of lion and lis (mill). The total value of all gold coins in this pyx was £172.

Lis (Mill). Gold coins bearing this mark were machine struck by Eloye Mestrelle until his apprehension on 1 September 1568 on charges of complicity in forgery. After his subsequent reinstatement in the mint the mark continued to be used on silver coins until 1570 but no further gold was struck. Gold coins with the lis mark have serrated edges, an early form of 'milling', but otherwise they are similar in appearance to the star coins. The

¹⁴ I. D. Brown, 'A new mintmark for Elizabeth I', *NCirc* 80 (1972), 59–60.

¹⁵ In contemporary documents this mark is called a crown.

The term coronet is used here to avoid confusion with the crown gold standard and the crown denomination.

estimate of the size of the issue is based on the sales record (see star). Lis coins were pyxed on 13 February 1571 with those of coronet and lion.

Castle. For the estimate of the size of this issue see coronet. The pyx was held on 7 May 1572. No details are given.

Ermine. Coins to the value of £57.10.0 were pyxed on 30 October 1573.

Acorn. Coins to the value of £32.2.6 were pyxed on 25 May 1574.

Eglantine. Coins to the value of £59.2.6 were pyxed on 17 May 1580.

(Greek or Plain) Cross. These coins were struck under a new commission at slightly reduced fineness (992 rather than 995). The sales reports given in the table are approximate since the distinction between the mark 'cross' (all limbs equal) and 'long cross' (extended lower limb) was not always made in the earlier dealer's lists. Coins to the value of £48.10.0 were pyxed on 17 May 1580.

(Latin or) Long Cross. Struck at the lower standard. It is possible that no coins were struck before 28 November 1580, the date of the first commission that fell within the long cross period. Coins to the value of £64.0.0 were pyxed on 5 July 1582.

Sword. These coins were also struck at the lower standard and coins to the value of £80.12.6 were pyxed on 29 November 1583.

Bell. The amount of the issue has been estimated from the sales records, the sizes of the pyx and the mint records which show that £79.535 was issued during the period of the bell and A marks. Bell coins to the value of £72.2.6 were pyxed on 29 November 1583.

A. See bell for the method of estimating the size of this issue. Coins to the value of £106.17.6 were pyxed on 13 February 1585.

Scallop. The size of the issue is estimated from mint records but some coins included under crescent may have been struck with the scallop mark. This mark saw the largest issue of 30/- and 15/- in the reign, about half of all the gold being struck in these denominations, but the issue was still small, the frequency of these pieces in the sales record reflecting more their desirability than their abundance. Coins with the scallop mark were pyxed on 30 May 1587.

Crescent. See scallop regarding the size of the issue. The records of the pyx are missing.

Hand. There is no record of the pyx trial.

Tun. Fine gold to the value of £23.5.0 in pieces of 10/-, 5/- and 2/6 and crown gold to the value of £34.7.6 in pieces of 20/-, 10/-, 5/- and 2/6 were pyxed on 8 May 1594. Although the fine sovereign of 30/- is not mentioned in this pyx it is a relatively common coin. Records for the tun, woolpack and key marks are not complete and the issue sizes have had to be reconstructed. The total issue for these three marks has been estimated at £73.195 by Challis.¹⁶ Craig provides a breakdown for this period and arrives at a similar total.¹⁷ The estimates given in the table have been based on these figures, the sales record and the size of the pyxes. The indenture that initiated the third issue was signed during the course of the tun mark. Fine gold coins have been assigned to the second issue although some may have been struck during the period of the third issue. New designs were introduced for the third issue crown gold and patterns of the half-pound are known. The pound coins are fairly rare and some have lions at the end of their obverse legend which may relate to the legislation of 1575 which introduced the lion passant guardant as a mark for 22 ct gold. This was the first issue of crown gold since the legislation was passed.

Woolpack. In the pyx of 13 February 1596, £10.10.0 was included in fine gold in denominations of 30/-, 15/-, 10/-, 5/- and 2/6 and £83.2.6 in crown gold in denominations of 20/-, 10/-, 5/- and 2/6. Probably not all the fine gold denominations were struck with this mark and in any case none are now known though some key quarter-angels have the privy mark struck over woolpack. See tun for a discussion of the estimates of the sizes of the issues.

¹⁶ C. E. Challis, p. 308.

¹⁷ J. Craig, p. 414-5.

Key. Fine gold to the value of £52.7.6 in pieces of 10/-, 5/- and 2/6 and crown gold to the value of £50.12.6 in pieces of 20/-, 10/-, 5/- and 2/6 were pyxed on 7 February 1599. In spite of the large pyx size the three angel denominations are rare as are the 5/- and 2/6 in crown gold. The estimates for the issue size are based on the figure given by Craig but there is a serious discrepancy between the figures given by Craig and those given by Challis for the crown gold struck during the marks key and anchor.

Anchor. The estimates of the issue size are based on the mint records as given by Craig (but see above under key). The coins were pyxed on 30 April 1600.

Cypher. The estimate of the size of the issue are based on the figures given by Challis and the sales record. The coins were pyxed on 20 May 1601.

One. The sizes of the issues have been estimated from the mint records for the combined periods of marks one and two (£1,292 in fine gold and £21,739 in crown gold), the pyx records (for mark 2) and the sales record. The pyx records for one are missing but the trial was held on 14 May 1602.

Two. See privy mark one for the method of estimating the sizes of this issue. Coins to the value of £3.12.6 in fine gold and £24.10.0 in crown gold were pyxed on 7 June 1603.

TABLE 2

Listing of Varieties

Table 2 is arranged by denomination and within each denomination chronologically. Variations in busts and legend readings are noted. In all cases the provenance given refers to a public collection, to an illustration (e.g. in a sales catalogue) or to one of the plates. Where none of these is available citations are given to places where the piece has been referred to, but these should not be taken as evidence that such a piece exists. The bust numbering is taken from Brown and Comber for the hammered coins and from reference in Borden and Brown for the milled.¹⁸

Abbreviations used for Provenances

AM	Ashmolean Museum, Oxford
Barnes	J. H. Barnes, Sotheby, 26 June 1974
BM	British Museum, London.
CHC	C. H. Comber, Private Collection
Clont	Clontarbrook Trust (Lockett coins), Glendining/Baldwin, 7 June 1974
Doubleday	Gordon V. Doubleday, Glendining, 20 November 1961
FM	Fitzwilliam Museum, Cambridge
Glen	Glendining's Auction (date) – lot number
Graham	K. V. Graham, Glendining, 12 June 1963
H	Hunterian Cabinet, Glasgow
Hird	Alderman H. Hird, Glendining, 30 May 1961
LM	City and County Museum, Lincoln
Lockett	R. C. Lockett, English sales, Glendining, 1955–1961 – lot number
(Plate numbers refer to the photographs of coins not illustrated in the catalogues. These can be viewed at the British Museum.)	
Murdoch	J. G. Murdoch, Sotheby, 31 March 1903
Noble	Mr & Mrs B. R. Noble, Glendining/Spink, 11 December 1975
Raynes	W. L. Raynes, Glendining, 15 February 1950
Ryan	V. J. E. Ryan, Glendining, 28 June 1950
Spink	Spinks Auction Catalogues (Sale number) – lot number
SCMB	Seaby's <i>Coin and Medal Bulletin</i> – (date) – coin number
NCirc	Spinks <i>Numismatic Circular</i> – (date) – coin number
TBCT	T. Bryan Clarke Thornhill, Glendining, 24 May 1937

Although many coins from the V. J. E. Ryan (Glendining 28 June 1950) and R. C. Lockett (11 Oct. 1956, 4 Nov. 1958; 26 Apr. 1960 and 17 Nov. 1961) collections have subsequently reappeared on the market, we have retained the original reference unless the coin is now in a museum collection.

¹⁸ I. D. Brown and C. H. Comber, 'Portrait Punches used on the Hammered Coinage of Queen Elizabeth I', *BNJ* 58 (1988), 90–6; D. G. Borden and I. D. Brown, p. 108–132

SOVEREIGN OF 30 SHILLINGS

First Issue

Obverse	ELIZABETH D'G'ANG'FRA'ET'HIB'REGINA: [Queen seated on throne, portcullis below]
Reverse	A'DNO'FACTV'EST·ISTVD·ET·EST·MIRAB'IN·OCVLIS·NRIS? [Royal arms on Tudor Rose]
Throne Pillars	Five large pellets each side.
Throne Back	Pellets in lozenge hatching.

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
A1	Lis, Z:HIB? no chains on portcullis	Lis, Z for ET ISTV MIRA·OCVL		AM, Lockett-1948 (pl. 8)
A2	Lis, Z:HIB? no chains on portcullis	Lis, Z for ET MIRABI·OCV		Ryan-268, Glen (3 Oct. 1963)-136
A3	Lis, Z:HIB? no chains on portcullis	Lis, Z for ET MIRABI·OCV·NRI		BM
A4	Cross Crosslet	Cross Crosslet/ lis ISTV MIRA·OCVL ET over Z	Same R die as A1	BM, SCMB (Dec. 1983)- EG95, Lockett-1949, Raynes-115, Glen (28 Nov. 1974)-558 (pl. 8)
A5	Cross Crosslet	Cross Crosslet		BM, SCMB (Dec. 1965)-G2441A

*Second Issue**Double Noble – Sovereign*

Obverse	ELIZABETH·D'G'ANG'FRA'ET'HIB'REGINA [Queen seated on throne portcullis below. The back of the throne is decorated with cross hatched pattern containing (i) pellets or (ii) annulets. The pillars of the throne are (a) plain or decorated with (b) single pellets or (c) lis and quatrefoils of pellets or (d) annulet and double pellets or (e) annulet and single pellet or (f) lis and double pellets]
Reverse	A·DNO'FACTV'EST·ISTVD·ET·EST·MIRAB' IN·OCVLIS·NRS [Royal arms on Tudor rose]

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
A6	A/Cross Crosslet i b, HIBE?	A/Crosslet NRIS		Lockett-3273
A7	A ii c	A/Cross Crosslet NRIS		Lockett-1950 (pl. 8)
A8	A i b	A		BM
Note: From now on tressure is broken by Queen's head only				
A9	A i b	A		Lockett-4088, Glen (26 Nov. 1980)-24
A10	Scallop/A i b	Scallop/A		BM, Lockett-4382
A11	Scallop i d	Scallop/A		Lockett-1951
A12	Scallop i d	Scallop NRIS		BM, Lockett-3274
A13	Scallop ii d	Scallop NRIS		Lockett-4383
A14	Scallop ii d	Scallop/A		Glen (26 Nov. 1980)-26
A15	Scallop ii f	Scallop		BM, Spink(16)-28
A16	Scallop ii f	Scallop OCVL		Lockett-3275
A17	Scallop i e	Scallop		BM, Glen (4 Mar. 1981)-30
A18	Scallop i b	Scallop		Lockett-4384, Spink (9)-367
A19	Crescent/Scallop ii d	Crescent/Scallop		Lockett-1952
A20	Crescent/Scallop ii d	Crescent/Scallop OCVL		BM, Lockett-4089
A21	Crescent/Scallop ii f	Crescent/Scallop		BM
A22	Crescent i a	Crescent/Scallop		Lockett-3276
A23	Hand(?/Crescent) i b	Hand/Crescent		BM, Graham-25 (pl. 8)

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
[A24	Hand/Crescent/ Scallop i b	Hand/Crescent Scallop		Ryan-273 (not illustrated)]
[A25	Hand a	Hand		Mentioned by Whicher ¹¹
A26	Tun i b	Tun OCVL		BM, Spink (32)–316. Spink (9)–368

NOBLE (RYAL) OF 15 SHILLINGS

Second Issue

Obverse	ELIZAB?D?G?ANG?FR?ET HIB-REGINA: [Queen standing in a contemporary sailing ship]
Reverse	IHS?AVT?TRANSIENS PER-MEDIV?ILLORVM-IBAT [Geometric design]
Note	All lettering is Lombardic. Prow of ship breaks HIB in legend as indicated below. Crowned lions on reverse, sometimes proper, sometimes in saltire. Differing number of sail furls to left and right of Queen's head. Die numbering of Thompson (T) is given

Varieties

<i>Number</i>	<i>Privy Mark (reverse only)</i>	<i>HIB</i>	<i>Sail Furls</i>	<i>Rev. Lions</i>	<i>Provenance</i>
B1 T(02/R1)	·A·	HI/B	2 left, 3 right	Proper	Spink (9)–369
B2 T(01/R1)	·A·	H/IB	2 left, 3 right	Proper	Lockett-3277
B3 T(02/R1)	·A·	HI/B	3 left, 3 right	Proper	BM
B4	Escallop/·A·	HI/B	2 left, 3 right	Proper	Ryan-275
B5	Escallop/·A·	H/IB	2 left, 3 right	Saltire	Graham-26, TBCT-108
B6 T(01/R2,R3)	Escallop	H/IB	2 left, 3 right	Proper	BM, Lockett-1954
B7 T(05/R3*)	Crescent	HI/B	2 left, 3 right	Proper	BM
B8	Crescent	HI/B	2 left, 4 right	Proper	Ryan-276, (pl. 8)
B9 T(05/R5)	Hand	HI/B	3 left, 2 right	Proper	BM – only known specimen with this privy mark. (pl. 8)

NB: The Hand piece has a lion each side of the rose on the obverse as do the Continental imitations; these latter pieces (normally of privy mark A) are not included in this study (see Thompson and Ives).¹⁰ Some of the earlier regular issue ryals also have two obverse lions.

ANGELS OF 10 SHILLINGS

First Issue

Obverse	ELIZABETH D·G·ANG·FRA·ET·HIB·REGINA· [St. Michael slaying the dragon, beaded inner circles (except as noted)]
Reverse	A·DNO·FACTVM·EST·ISTVD·ET·EST·MIRABI· [Medieval ship facing right with crowned wooden cross instead of mast, beaded inner circles (except as noted)]

Varieties

Number	Obverse	Reverse	Remarks	Provenance
C1	Lis Wire line circle FRAN REGI. Z for ET	Lis Wire line circle Z for ET, MIRABILE		BM. Lockett-1956 (pl. 9)
C2	Lis Wire line circle FRAN REGI. Z for ET	Lis Wire line circle Z for ET		Raynes-123
C3	Lis Wire line circle REG. Z for ET	Lis Wire line circle Z for ET		BM
C4	Lis REGI. Z for ET	Lis Wire line circle Z for ET		BM
C5	Lis REGI. Z for ET	Lis Z for ET E/Rose, Rose/E		Ryan-279
C6	Lis REGI. Z for ET	Lis Z for ET MIRAB		Lockett-3278
C7	Cross Crosslet	Cross Crosslet E/Rose, Rose/E		BM SCMB (Dec. 1956) -G1717 (pl. 9)
C8	Cross Crosslet FR	Cross Crosslet E/Rose, Rose/E		SCMB (May 1973)-G2466
C9	Coronet	Coronet	Now very rare	BM. Lockett-4090

Second Issue

Obverse	ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA· [St. Michael slaying the dragon]
Reverse	A·DNO·FACTVM·EST·ISTVD·ET·EST·MIRABI· [Medieval ship facing right (except as noted) with crowned wooden cross instead of mast]

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
C10	3 ptd. Ermine HIB	3 ptd. Ermine	Ship faces left	BM, SCMB (Dec. 1969)–G2761
C11	Bulb. Ermine	Bulb. Ermine	Ship faces left	BM, SCMB (Jan. 1962)–G19,
C11a			(C'mkd. with Dutch arms on obv.)	Lockett–1959
C12	Acorn/Ermine	Acorn/Ermine	Ship faces left	BM, Lockett–4091 (pl. 9)
C13	Acorn	Acorn	Ship faces left (C'mkd. with Dutch arms on rev.)	BM
C14	Eglantine	Eglantine	Ship faces left	BM, Lockett–3279
C15	Eglantine	Eglantine		Lockett–1960
C16	Cross/Eglantine	Cross/Eglantine		Lockett–4385
C17	Cross	Cross		BM, Glen (28 Nov. 1974)–561
C18	Long Cross/Cross	Long Cross		SCMB (Jan. 1962)–G20
C19	Long Cross	Long Cross		BM, II, SCMB (May 1973)–G2465
C20	Sword	Sword		BM, SCMB (Aug. 1966)–G1772
C21	Bell/Sword (?)	Bell/Sword		BM
C22	Bell/Sword	Bell		Ryan–288
C23	Bell/Sword	Bell	No bowsprit to ship	Ryan–289
C24	Bell	Bell		Lockett–4386
C25	Bell	Bell	No bowsprit to ship	Lockett–1963
C26	A/Bell	A/Bell		Glen (12 May 1982)–25
C27	A/Bell	A		BM, Glen (10 Mar. 1982)–174
C28	A	A/Bell	No bowsprit to ship	Lockett–3280
C29	A	A		BM, Lockett–1964
C30	Scallop/A	Scallop/A		Spink (11)–953

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
C31	Scallop/A	Scallop		BM
C32	Scallop	Scallop/A		<i>NCirc</i> (June 1976)–4647
C33	Scallop	Scallop		BM, Lockett–1965
C34	Crescent/Scallop	Crescent	(A variety has T in second EST overstruck)	<i>SCMB</i> (May 1972)–G691, <i>NCirc</i> (Sept. 1983)–5560
C35	Crescent	Crescent	(A variety has letter A in ELIZABETH over B)	BM, Spink (32)–318, <i>SCMB</i> (1986) EG 29
C36	Hand/Crescent	Hand/Crescent		<i>SCMB</i> (June 1974)–G431
C37	Hand/Crescent	Hand		BM? Glen (9 Dec. 1981)–397
C38	Hand	Hand/Crescent	(may be same as C39)	Spink (16)–29
C39	Hand	Hand		BM, Lockett–1966
C40	Tun	Tun/Hand	B of MIRABI looks like R	<i>SCMB</i> (June 1960)–G794
C41	Tun	Tun		BM, Glen (3 Oct. 1963)–151
C42	Tun	Tun MIRARI		BM, Ryan–293

Third Issue

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
[C43	Woolpack	Woolpack	not known but pyxed]	
C44	Large Key (R)	Medium Key (L)		BM
C45	Large Key (R)?	Medium Key (L)?		BM
C46	Anchor/Key IIIB	Anchor	No Bowsprit to ship	Lockett–1967 (pl. 9)
C47	Anchor IIIB	Anchor		BM
C48	Cypher IIIB	Cypher		BM, Lockett–1968
C49	One	One	Probably less than 6 now known	Ryan–295, Doubleday–123 (pl. 9)
C50	Two IIIB	Two		BM, Lockett–3282

HALF-ANGEL OF 5 SHILLINGS

First Issue

Obverse	ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA [St. Michael slaying the dragon, beaded inner circles]
Reverse	A·DNO·FACTVM·EST·ISTVD·ET·EST·MIRA· [Medieval ship facing right with crowned wooden cross instead of mast, beaded inner circles]

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
D1	Lis Z for ET No REGINA	Lis Z for ET M for MIRA		BM, Ryan-297, Lockett-1969
D2	Cross Crosslet	Cross Crosslet E/Rose and Rose/E		Lockett-3283
D3	Coronet FR. HI	Coronet	Now an extremely rare coin	Ryan-298 (pl. 9)

Second Issue

Obverse	ELIZABETII·D·G·ANG·FR·ET·HII·REGINA [St. Michael slaying the dragon]
Reverse	A·DNO·FACTVM·EST·ISTVD·ET·EST·MIRA· [Medieval ship facing right with crowned wooden cross instead of mast]

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
D4	3 ptd Ermine	3 ptd Ermine		Lockett-1970
D5	3 ptd Ermine AN	3 ptd Ermine		BM, Lockett-4094 (pl. 9)
D6	Acorn	Acorn		BM, Lockett-4388
D7	Eglantine	Eglantine		BM, Lockett-1971
D8	Cross	Cross		BM, Lockett-1972
D9	Long Cross	Long Cross E and rose by cross omitted	Very rare	Ryan-302, <i>SCMB</i> (July/ Aug. 1984) EG53 (pl. 9)
D10	Sword	Sword		BM, Lockett-1973
D11	Bell/Sword	Bell		Clont-176
D12	Bell	Bell/Sword		BM
D13	Bell	Bell		BM, Lockett-4389

Varieties

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
D14	A/Bell	A/Bell		BM, Lockett-1974
D15	Scallop/A	Scallop/A		BM, SCMB (Aug. 1961)G-1366
D16	Scallop ELIZAB IIB REGI	Scallop/A		Ryan-305
D17	Crescent/Scallop	Crescent Scallop		BM, Lockett-4095
D18	Crescent/Scallop	Crescent		BM
D19	Hand/Crescent	Hand FACTV MIRAB		BM, H
D20	Hand IIB	Hand		Clont-177
D21	Hand IIB	Hand FACTV MIRAB		BM
D22	Key	Key/Woolpack	Described as Key over woolpack in catalogue – not visible on illustration but reverse privy mark is over stamped.	Lockett-3285

QUARTER-ANGELS

First Issue

Type and legends presumably similar to second issue

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
[E1]	Coronet	Coronet	Reported but not illustrated. May not exist.	NCirc ₁ (Apr.1971)-4175] as a query – weak privy mark NCirc ₁ (Nov. 1972)-10428 NCirc ₁ (Aug.1899) and NCirc ₁ (March 1902)- these 2 coins are undoubtedly the same. None of the above coins is illustrated

Second Issue

Obverse	ELIZABETH D'GLANG'FRANCIE [St. Michael slaying the dragon]			
Reverse	ET HIBERNIE REGINA FIDEI [Medieval ship facing right with crowned wooden cross instead of mast]			

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
E2	3 ptd Ermine	3 ptd Ermine		BM, Lockett-1976(P1.60)
E3	Acorn	Acorn/Ermine		BM, Lockett-3286

108 GOLD COINAGE OF ELIZABETH I				
<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
[E4	Acorn	Acorn		SCMB (June 1971)–G722] not illustrated
E5	Eglantine	Eglantine	A variety may occur with mark over acorn either side	BM, SCMB (April 1976)–G405
E6	Cross	Cross		BM, (pl. 9)
E7	Long Cross/Cross	Long Cross		SCMB (Sept. 1955)–G1309
E8	Long Cross	Long Cross		BM, Lockett–4096
E9	Sword	Sword		BM
E10	Bell	Bell/Sword		BM
E11	Bell	Bell		BM, Lockett–1979
E12	A/Bell	A		BM
E13	A	A	Probably same as E12. Illustration poor	SCMB (Aug. 1957)–G1158
E14	Scallop	Scallop		BM, Ryan–310
[E15	Crescent/Scallop	Crescent/Scallop		SCMB (Oct. 1958)–G1447] (Not illustrated)
[E16	Crescent/Scallop	Crescent		SCMB (Oct. 1959)–G1635] (Not illustrated)
E17	Crescent	Crescent		BM, Lockett–1980 (May be E16)
E18	Hand	Hand		BM, Lockett–4391, Ryan–311
E19	Tun	Tun		BM, Lockett–4097
<i>Third Issue</i>				
Type and legend same as Second Issue				
E20	Key/Woolpack FRAN	Key/Woolpack FIDE		Lockett–3288 (pl. 9)
E21	Key FRAN	Key FIDE		BM
E22	Anchor	None		BM

CROWN GOLD

POUND OF TWENTY SHILLINGS

First Issue

Privy Mark – Rose

Number	Obverse Legend	Reverse Legend	Provenance
F1	ELIZABETH.D?G?ANG?FRAN?ET: HIB?REGINA?	IHS?AVTEM.TRANS?PER: MEDIV?ILLOR?IBAT	AM (pl. 9)

Note: Completely different from any other normal currency piece. A small bust (P1) of the Queen faces left, and features a ruff and ermine mantle. The reverse shield is of fine work and slightly garnished. There are no beaded circles, but faint wireline circles are evident on both sides, probably to serve as register marks for the legend. Both known examples are in the Ashmolean Museum, and although showing some signs of wear, it is considered that they are pattern pieces probably struck in 1565, as suggested by the rose privy mark. A full description of this piece was given by Mallinson and Sutherland.¹⁹

POUNDS OF TWENTY SHILLINGS

Third Issue

Obverse	ELIZABETH.D?G?ANG?FRA?ET:HIB?REGINA? [Large elaborately decorated bust with crown penetrating inner circle. Privy mark at beginning of legend. Stops in legend are pellets except as noted]		
Reverse	SCVTVM FIDEI PROTEGETEAM? [Crowned Royal Arms flanked by ER. Stops in legend are (a) single pellets or (b) double pellets or (c) single annulets or (d) double annulets]		

Number	Obverse	Reverse	Remarks	Provenance
F2	Lion and Tun Bust 7A Annulet stops	Tun b		Barnes-137
F3	Lion and Tun Bust 7A Annulet stops	Tun d		BM, Lockett-1981 (pl. 9)
F4	Tun Bust 7A	Tun d	N.B. Some examples of F4 may have the lion erased from the obverse die – cf. SCMB (Apr. 1973) –G2378	Lockett-4098
F5	Woolpack Bust 8A Annulet stops	Woolpack b		SCMB (May 1968)–G688

¹⁹ A. Mallinson, 'A rose-marked pound of queen Elizabeth', *NC* 5th ser. 14 (1933), 8–14. C. H. V. Sutherland, 'A second rose-marked pound of 1565', *NC* 5th ser. 15 (1934), 136–137.

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
F6	Woolpack Bust 8A Annulet stops	Woolpack c		BM, Lockett-1982
F7	Woolpack Bust 8A Annulet stops	Woolpack d		BM, Noble-573
F8	Woolpack Bust 8A III	Woolpack c		BM, Spink (16)-525
F9	Woolpack Bust 8A III	Woolpack d		BM, Spink (16)-524
F10	Woolpack (at end of legend). Bust 8A III Bust	Woolpack c		BM (pl. 9)
F11	Key/Woolpack Bust 8A	Key/Woolpack a		Lockett-1983
F12	Key/Woolpack Bust 8A	Key/Woolpack c		BM, SCMB (Sept.1980) -A710
F13	Key/Woolpack Bust 8A	Long Key a		BM, Ryan-315
F14	Key/Woolpack at end of legend) Bust 8A HIBER	Key/Woolpack a		Spink (9)-370, Lockett-3289
F15	Key/Woolpack (at end of legend) Bust 8A HIBER	Key/Woolpack c		BM
F16	Key/Woolpack (at end of legend) Bust 8A HIBER	Long Key a		BM
F17	same as F16	Medium Key a		Glen(22 Sept.1982) -18
F18	Long Key Bust 8A FR	Key/Woolpack a		Glen (4 Mar.1981)-31
F19	Small Key Bust 8A	Long Key a		BM
F20	Anchor/Key Bust 8A	Anchor/Key a		BM, Ryan-316

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
F21	Anchor/Key Bust 8A	Anchor/Key b	N.B. Anchor over Key over Woolpack is noted by H. A. Seaby but not verified by us	Lockett-3290
F22	Cypher Bust 8A	Cypher a		BM, Spink (32)-376
F23	One: Bust 8A	One: a		BM, Lockett-3291 (P1.60)
F24	Two: Bust 8A	Two: a		BM, SCMB (Feb 1983)-EG10, Glen (4 March 1981)-32

HALF-POUND OF TEN SHILLINGS

First Issue

Obverse	ELIZABETH: D:G:ANG:FR:ET:HI:REGINA [Portrait of queen, beaded inner circle (except where noted)]
Reverse	SCVTVM:FIDEI:PROTEGET:EAM [Royal arms flanked by ER, beaded inner circle (except where noted)]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
G1	Lis, Bust 1B Wire line inner circle ELIZABET: FRA:Z:HIIB:REGINA	Lis, Wireline inner circle Large crown with frosted interior	Possibly unique	CHC (pl. 11)
G2	Lis, Bust 1B Wire line inner circle FRA:Z:HIIB:REGIN?	Lis, Wireline inner circle PROTEGE?		Ryan-320
G3	Lis, Bust 1B Wire line inner circle FRA:Z:HIIB:REGIN?	Lis, Wireline inner circle		BM
G4	Lis, Bust 1B Wire line inner circle. FRA: Z:HIIB:REG!	Lis, Wireline inner circle PROTEGE?		BM, (pl. 9, 10)
G5	Cross Crosslet Bust 3C FRA	Cross Crosslet PROTEGI	Deterioration of the jewels on the crown arch provide a means of finding the relative date of coins with bust 3C	BM, Graham-29
G6	Cross Crosslet Bust 3C HIIB	Cross Crosslet		BM, SCMB (Dec.1983)-F:G95

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
G7	Cross Crosslet Bust 3C	Cross Crosslet		BM, Spink (32)–313; Ryan–321. (pl. 10)
[G7 ^A	Rose/Cross Crosslet FRA Bust 3C	Rose/Cross Crosslet	Specific reference to over-marking on both sides – unconfirmed.	<i>NCirc</i> (Jan.1968)–78] (not illustrated)
G8	Rose Bust 3C FRA	Rose/Cross ²⁰ Crosslet		BM, Spink (24)–216
G9	Rose Bust 3C FRA	Rose		BM, Lockett–3292
G10	Portcullis Bust 3C FRA	Portcullis		BM, <i>SCMB</i> (Jan.1967)–G32
G11	Portcullis Bust 3C	Portcullis	Erroneously described <i>NCirc</i> (Sept.1974) as reading SCVIVM. – it reads normally but the T is weak	Lockett–1987
G12	Portcullis Bust 3C HIB	Portcullis PROTEGE:TEAM		BM
G13	Portcullis Bust 3C AN. HIB	Portcullis PROTEGE: TEAM		BM
G14	Lion Bust 3E	Lion	Very rare	BM, H, Lockett–1988 (pl. 10)
G15	Lion Bust 4A	Lion	Three known	Ryan–325, LM, CHC (pl. 10)
G16	Coronet Bust 4A	Coronet		BM, Spink (16)–520
G17	Coronet Bust 4A	Coronet SCVTV?		<i>SCMB</i> (Mar.1964)–G509
G18	Castle Bust 4A	Castle		BM, Lockett–4099, Spink (16)–521

HALF-POUNDS

Third Issue

Obverse

ELIZAB?D?G?ANG?FRA?ET-HIB?REGINA

[Elaborate portrait of Queen with crown penetrating inner circle]

²⁰ The present paper owes its existence to a comment about these coins by H. Schneider in 'Lot 216', *NCirc* 91

(1983), 221–2 and the response by C. H. Comber in *NCirc* 91 (1983), 341.

Reverse		SCVTVM:FIDEI,PROTEGET-EAM [Royal arms flanked by ER]		
<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
G19	Tun Bust P2 ELIZABETH HI		No inner circles, undoubtedly a pattern. Probably unique	BM (pl. 10)
G20	Tun Bust P3 ELIZABETH HI		Bust wholly within inner circle, usually described as a pattern. Extremely rare	BM, AM (pl. 10)
G21	Tun Bust 7B	Tun (single pellet stops)		Spink (16)–526
G22	Tun Bust 7B	Tun (double pellet stops)		Ryan–329 (pl. 10)
G23	Tun Bust 7B REGIN	Tun (single pellet stops)		Spink (6)–593
G24	Tun Bust 7B REGIN	Tun (double pellet stops)		Lockett–1989
G25	Tun Bust 7B REGI	Tun (single pellet stops)		BM
G26	Woolpack Bust 8B ELIZABETH HI	Woolpack	R of REGINA over B of HIB?	BM, Lockett–4394, SCMB (Dec.1971)–G1736 (pl. 10)
G27	Woolpack Bust 8B ELIZABETH HIB	Woolpack	Larger shield on some reverse dies see (pl. 10)	BM, Noble–574
G28	Key Bust 8B	Key		BM, Ryan–331, Lockett–1990
G29	Anchor/Key Bust 8B ELIZABETH ANG FRA HI	Anchor/Key		BM, Lockett–3293
G30	Cypher Bust 8B ANG FRA HIB	Cypher		BM, Ryan–332 (pl. 10)
G31	One Bust 8B ANG FRA HIB	One:		BM, Lockett–1991
G32	Two: Bust 8B ANG FRA HIB	Two:		BM, Lockett–4100

CROWN OF FIVE SHILLINGS

Obverse	ELIZABETH: D?G?ANG?FR?ET?HIB?REGINA [Portrait of queen, beaded inner circles (except where noted)]			
Reverse	SCVTVM:FIDEI:PROTEGET:EAM [Royal arms flanked by ER, beaded inner circles (except where noted)]			
<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
H1	Lis No inner circles. Bust 1E with pearls between straps. FRA?Z:HIB?REGI	Lis Wireline inner circles	Excessively rare the obverse die is used on one groat (possibly unique) which R. Carlyon- Britton had in his 1949 collection	BM, CHC (pl. 10)
H2	Cross Crosslet Bust 1F AN H1	Cross Crosslet prob. over lis	Same reverse die as H1 with beaded inner circles added	SCMB (Oct. 1978)–A962
H3	Cross Crosslet Bust 1F H1	Cross Crosslet		BM, SCMB (Jan. 1971)–G20
H4	Cross Crosslet Bust 1F	Cross Crosslet		BM, Lockett–1992
H5	Cross Crosslet Bust 1F AN H1	Cross Crosslet		BM
H6	Rose/Cross Crosslet Bust 1F	Rose		BM
H7	Rose/Cross Crosslet Bust 1F	Rose (Inverted A's for V's in SCVTVM)		Noble–566
[H7A	Rose Bust 1F	Rose		Ryan–336, SCMB (Jan. 1958)] –G19(neither illustrated)
H8	Portcullis Bust 1F AN	Portcullis		BM, Ryan–337 (pl. 10)
H9	Lion Bust 4C	Lion PRTEGET		BM
H10	Coronet Bust 4C	Coronet		BM, Lockett–1993
H11	Coronet Bust 4C AN	Coronet		BM (pl. 10)
H12	Castle Bust 4C	Castle	Extremely rare	Lockett–3294, CHC (pl. 10)

Third Issue

Obverse	ELIZAB?D?G?ANG?FRA?ET?HIB?REGI? [Elaborate portrait of queen, privy mark at beginning of legend]			
Reverse	SCVTVM·FIDE·PROTEGET·EAM· [Royal arms flanked by ER]			
<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
H13	Tun Bust 7C	Tun		BM, Lockett-3295
H14	Woolpack Bust 7C	Woolpack		Lockett-1994, SCMB (Feb.1969)-G122
H15	Woolpack (at end of legend) Bust 7C	Woolpack		Ryan-340
H16	Woolpack (at end of legend) Bust 7C	Woolpack EA?		BM, SCMB (Dec.1978) -A1216
H17	Woolpack (at end of legend) Bust 7C FR?	Woolpack		BM
H18	Woolpack (at end of legend) Bust 7C FR?	Woolpack EA?		SCMB (July.1984)-EG55
H19	Key/Woolpack (at end of legend) Bust 7C FR?	Key EA?		CHC ex Ryan-341 (pl. 11)
H20	Key (at end of legend) Bust 7C FR?	Key EA?		NCirc (Oct.1976) -8242
H21	Anchor	Anchor		Untraced – this probably does not exist]
H22	Cypher Bust 8C FR?H?	Cypher EA?		BM, Lockett-4J01
H23	One: Bust 8C	One: EA?	Possibly unique: Noted by Baldwin and re-purchased by Baldwin ex Lockett ²¹	Lockett-1995
H24	Two: Bust 8C	Two: EA?		BM, Lockett-3296, NCirc (Oct.1986)-6845 (pl. 11)

²¹ Exhibited at the British Numismatic Society by A. H. F. Baldwin, *BNJ* 20 (1931), 213.

HALF-CROWN OF TWO SHILLINGS AND SIX PENCE

First Issue

Obverse	ELIZABETH: D?G?ANG?FRA?Z-IB?RE? [Portrait of queen, wireline inner circles (except where noted)]
Reverse	SCVTVM:FIDEL:PROTEG?EAM [Royal arms on small shield (7.5 × 7mm) flanked by ER, wireline inner circles (except where noted)]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
J1	Lis Bust 1G with pearls between straps. Dover G	Lis	One of the half- groat dies was used for the half-crown with pearls added to punch.	BM [Ex Carlyon-Britton]. The only other known specimen was noted in <i>NCirc</i> Jan.1902 and later illustrated in Murdoch-599, now in CHC. (pl. 11)
J2	Cross Crosslet over lis Beaded inner Circles Bust 1G ELIZBETH: ET	Cross Crosslet over lis Beaded inner circles	Lis not visible either side. Reverse die of J1 used with beaded inner circle added	CHC

Obverse	ELIZABETH: D?G?AN?FR?ET-IB?REGINA [Portrait of queen, beaded inner circles]
Reverse	SCVTVM:FIDEL:PROTEGET:EAM [Royal arms on shield 9.25 × 8 mm flanked by ER, beaded inner circles]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
J3	Cross Crosslet Bust 1G	Cross Crosslet Second V in SCVTVM inverted		Hird 58 (pl. 11)
J4	Cross Crosslet Bust 1G	Cross Crosslet		AM. SCMB (May 1972)–G693
J5	Cross Crosslet Bust 3F	Cross Crosslet	J5 is the common variety	BM, Lockett-1996. Ryan-344 (pl. 11)
J6	Rose Bust 3F	Rose		BM
J7	Rose Bust 1G	Rose		BM, SCMB (Aug.1977) –A1311
J8	Portcullis Bust 1G ANG?	Portcullis		BM, SCMB (Feb.1967)–G263
J9	Lion Bust 4D	Lion		BM, Noble-567 (pl. 11)
J10	Coronet Bust 4D ANG?	Coronet		BM

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
J11	Castle Bust 4D ANG?	Castle		BM
J12	Castle Bust 4D ANG?	Castle PROTEET		Ryan-347, <i>SCMB</i> (Aug.1983) EG72, Spink (29)-68, <i>SCMB</i> (May 1986)-EG28

Third Issue

Obverse ELIZAB?D?G?ANG?FR?ET?HIB?REGI
[Elaborate portrait of queen, privy mark at start of legend]

Reverse SCVTVM:FIDEI:PROTEGET:EAM
[Royal arms on shield 7.5 × 7.25 mm. flanked by ER]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
J13	Tun Bust 7D	Tun		BM, Lockett-4395
J14	None Bust 7D	Tun		BM, Lockett-1997
J15	Woolpack Bust 7D	Woolpack		BM, Lockett-1998
J16	Woolpack (at end of legend) Bust 7D	Woolpack	Woolpack over Tun is listed <i>SCMB</i> (Nov.1950)-G957 Not illustrated and unconfirmed	<i>SCMB</i> (Sept/Oct.1964)-G20 CHC
J17	Key/Woolpack (at end of legend) Bust 7D	Key/Woolpack		Lockett-3297, CHC (pl. 11)
J18	Key (at end of legend) Bust 7D	Key/Woolpack		BM
J19	None Bust 7D HIB?REGIN?	Key/Woolpack		BM
J20	Anchor Bust 7D	Anchor	Probably unique	CHC ex Ryan-350 (pl. 11)
J21	Cypher Bust 7D HI?	Cypher		BM, <i>NCirc</i> (Dec.1989)-6477
J22	One: Bust 7D	One:		<i>NCirc</i> (Dec.1898)-50157] <i>NCirc</i> (Jan.1900)-59202. <i>NCirc</i> (Jan.1902)-68963, <i>NCirc</i> (Mar.1902)-81274. All 4 references are to the same coin. No illustration traced. All say 'Rare Date'. Unpublished RR F £2/5/-
J23	Two: Bust 7D	Two: EA:		BM, Lockett-4102

First Issue

(reference is given to the numbering of Borden and Brown (BB))

POUND OF TWENTY SHILLINGS

K1 Pattern privy mark star.
There exists in the British Museum a unique gilded uniface pattern in base metal. Reference is made to it by Helen Farquhar.²² The portrait shows the queen apparently dressed in plain armour with a lion's head device on the shoulder (pl. 11).

Obverse Legend ELIZABETH DEI GRA ANG FRAN ET HB REGINA
The z is curly, suggestive of a date between late 1562 and 1564.

HALFPOUND OF TEN SHILLINGS

Obverse ELIZABETH DEI GRA ANG FRA ET HB REGINA
[Portrait of queen, no inner circle, toothed outer border]

Reverse SCVTVM FIDEI PROTEGET EAM
[Crowned royal arms flanked by ER]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
L1(BB1)	Star Bust BB-A	Star	Possibly unique; undoubtedly a pattern bearing intermediate size shilling bust BB16-03.	Lockett-2038
L2(BB2)	Star Bust BB-C FR	Star		BM, AM, FM
L3(BB3)	Star Bust BB-D	Star		BM, AM, Lockett-4396
L4 (BB4.5)	Star Bust BB-D pellet outer circle	Star pellet outer circle		BM
L5(BB6)	Lis Bust BB-E	Lis	edge serrated	BM, AM, FM

CROWN OF FIVE SHILLINGS

Obverse ELIZABETH DEI GRA ANG FRA ET HB REGINA
[Portrait of queen, no inner circles, toothed outer border]

Reverse SCVTVM FIDEI PROTEGET EAM
[Crowned royal arms flanked by ER]

²² H. Farquhar, 'Portraiture of our Tudor monarchs on their coins and medals', *BNJ*, 4, 316 (1908), 140.

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
M1(BB7)	Star Bust BB-A	Star		BM, FM, Lockett-2040
M2(BB8)	Star Bust BB-D Pellet outer circle	Star Pellet outer circle		BM
M3 (BB9)	Lis Bust BB-E	Lis FIDI:EI	edge serrated	BM, FM, Lockett-3307

HALFCROWN OF TWO SHILLINGS AND SIX PENCE

Obverse	ELIZABETH·D·G·ANG·FRA·ET·HIB·REGINA [Portrait of queen, no inner circle, toothed outer border]
Reverse	SCVTVM·FIDEI·PROTEGET·EAM [Crowned royal arms flanked by ER]

<i>Number</i>	<i>Obverse</i>	<i>Reverse</i>	<i>Remarks</i>	<i>Provenance</i>
N1 (BB10)	Star Bust BB-D Pellet outer circle	Star Pellet outer circle		BM, Lockett-3308
N2 (BB11)	Lis Bust BB-E	Lis	edge serrated	BM, Lockett 2041



A1



A1



A4



A7



A23



A23



B8



B8



B9



C1



C1



C7



C12



C46



C49



C49



D3



D5



D9



E6



E6



E20



F1



F1



F3



F3



F10



G4



G4



G7



G14



G15



G15



G19



G19



G20



G22



G22



G26



G27



G30



H1



H1



H8



H11



H12

BROWN AND COMBER: ELIZABETH I (3)



H19



H19



H24



J1



J1



J3



J3



J5



J9



J17



J17



J20



J20



K1



G1



THE BAWBEE ISSUES OF JAMES V AND MARY

ROBERT B. K. STEVENSON

Introduction

THE intermittent coinages of the Scottish mint in the first half of the sixteenth century into the 1550s have attracted little new study for a long time with the exception of some rare gold.¹ Silver was virtually only struck between 1526 and 1538, supposedly at 10 deniers fine (83.3 per cent). The groat at eighteen pence Scots weighing 42.8 gr. (like Henry VIII's 1540 fourpenny groat) was thus intrinsically c.83 per cent of Henry's 1526 groat at 11.1 deniers which weighed 48 gr. It was billon that provided the bulk of the coins in circulation, in the form of placks, fourpence Scots, minted up to about 1515, and of sixpenny bawbees from 1538 or 1539 under James, and 1543 into 1554 under Mary. The bawbee at 3 deniers fine (75 per cent alloy) seems to have remained unchanged in quality or weight throughout,² while the successive debasements of Henry and Edward VI brought the English silver down, very briefly in 1551, to a base shilling of that same standard, described by George Brooke as the worst silver England ever saw. Edward's post-recovery base pennies at 4 deniers were comparable in size to the half-bawbee, but were supported by a range of good quality higher denominations not paralleled in Scotland till after the issue of bawbees had ceased.

Intensive collecting and study of billon has been discouraged by more than its low value, liability to corrosion and relative quantity. Good clear specimens have been difficult to find. Deficiencies in striking are common to thin base-metal coins, and have often been compounded by the long periods during which the placks and bawbees circulated. Thus a rural hoard buried c.1587 had still respectively 12 and 32 of these out of 94 coins (Noranside, Angus, 1962).³

In contrast to that find, two hoards hidden about 1530 (Linlithgow) and 1555 (Rigghead, Collin, Dumfriesshire) gave in 1963 considerable new opportunities for study.⁴ In particular they included the largest recorded numbers, in the first of James IV and James V placks (324) and in the second of James V bawbees (132). The latter were in particularly good condition. So were the accompanying bawbees of Mary (214), which were mostly of

Acknowledgements. The late Robert Kerr made the initial card-index of the Rigghead coins acquired for the National Museum. Dr I. H. Stewart has read the typescript critically at various stages; this and the prolonged loan of his bawbees have been invaluable to the study. Mrs J. E. L. Murray has read some parts. I am grateful for the opportunity of examining an unpublished hoard found in Linlithgow c.1935 presently on loan to the National Museums. Photographs for comparison were made available by the Ashmolean and Hunterian Museums' cabinets, and some from the British Museum and the Fitzwilliam Museum (Edinburgh whole bawbees omitted in particular), for which Mr N. J. Mayhew, Dr J. D. Bateson, Miss M. M. Archibald and Mr M. A. S. Blackburn are especially thanked. Photographs of the relevant parts of the late Dr James Davidson's collection and of the Lockett collection have been used. Dumfries Museum (Mr D. Lockwood) and Dundee Museum (Mr A. Zealand) have also been helpful.

The photographs and diagrammatic drawings are National

Museums of Scotland copyright. I am much indebted for them to Mr I. F. Larnier and Miss H. Jackson respectively, and to the Director Dr R. G. W. Anderson and other present members of staff for support and assistance.

¹ I. H. Stewart, *Scottish Coinage* second edition (London, 1967), pp. 200–3; Lt Col and Mrs Murray, see notes 23–24.

² Burns, p. 294, note 7. There is a very great variation in the present appearance of bawbees, from bright silvery through almost pewter to patinated dark brown as if entirely copper. Hoards show that this is due to differing circumstances in which each has been buried or hidden.

³ Noranside: I. D. Brown and M. Dolley, *Bibliography of Coin Hoards of Great Britain and Ireland, 1500–1967* (London, 1971), SO 20; Appendix here. See Braeside, Greenock (1955) buried c.1573, SO 2 and PSAS 89 (1955–56), 109–12.

⁴ Rigghead (cited below as Rigg), full summary in Appendix) and Linlithgow 1963, Brown SM 6 and SN 1.

early varieties that are less well represented elsewhere, but tapered sharply to the latest. In both finds there were groats of James V which are rare in hoards. Under Scots law the coins of whatever metal could be claimed for the Crown, and the preliminary study was made to provide a basis for selection for the National Museum of Antiquities (NMA) and other public collections, for rewards to the finders, and for the return to them of the remainder. Unfortunately it was not feasible at that time to make a photographic record as a permanent check on the initial catalogue. Further comparative review at intervals since has concentrated on the collections of the NMA.⁵ A limited amount of comparison beyond them has now been included, most recently from the illustrations of the Oxford and Glasgow *Sylloge*.⁶ It is planned to publish the resulting numismatic details in this *Journal*, beginning now with the bawbees and their halves, to be followed by James V's groats and one-third groats, and then by his placks with those of James IV. Further aspects of these and other hoards of the period may be covered by a later paper elsewhere.

James V's bawbees, 1538–42

The sixpenny bawbee was a newly devised denomination (pl. 12, 1). Together with the 3-merk 'bonnet-piece' ducat, dated 1539 and less rarely 1540, it broke away from earlier designs and the broader flans of placks and crowns. A new coin issued perhaps for several years before 1539 had been the one-third groat, also valued at sixpence, which contained 63 per cent more silver; it was no doubt inconveniently small, being similar in size and weight to the half-bawbee.

The history, contemporary name and typology of the bawbee were established by Edward Burns;⁷ previous numismatists had reckoned them as placks. He based his detailed classification on Thomas Coats' Scottish collection, now part of the national collections. His published sample of James's bawbees was, however, only seven with four halves, of which three were in other collections. Two of these were in the NMA which Richardson's catalogue of 1901 shows as having five of the bawbees and three halves;⁸ one more was added before 1962. The most accessible account with illustrations has been by I. H. Stewart.⁹

From the Rigghead hoard's 132 bawbees of James and 6 halves the NMA received 53 and 4 halves, the Hunterian Museum 15 and one half, and Dumfries Museum 23 (including 4 from a stray parcel) and one half. Forty were returned to the finders and so ultimately became available to collectors. The number of obverse dies represented was not firmly ascertained for the bawbees, but the maximum number of dies represented by a single coin is 93 with 13 noted more than once. Of the singles 7 have been duplicated in other samples examined, some photographically.

*Relations to the gold issues (pl. 12, A–G)*⁸

Bawbees were certainly projected in 1538, but the historical records (p. 125–7 below) do not make clear when their actual issue began. They covered at any rate less than five years during which a small amount of gold was struck from a very few dies. James V died in

⁵ The National Museums of Scotland, since the NMA was amalgamated with the Royal Scottish Museum (RSM) under a new Board of Trustees in 1985.

⁶ See also Note to Catalogue below; J. D. Bateson and N. J. Mayhew, *SCBI 35: Scottish Coins in the Ashmolean Museum, Oxford and the Hunterian Museum, Glasgow* (London, 1987); numerous Rigghead bawbees are there illustrated. Cited as AS and HS.

⁷ *The Coinage of Scotland* (Edinburgh, 1887), II, 262–8

and 292–307; III, pl. lvii, ix–lxii. Cited as Burns or B. The present paper is dedicated to Burns' memory following the centenary of the posthumous publication of his great work. See I. H. Stewart, 'Edward Burns', *BNJ* 57 (1987), 89–98.

⁸ A. B. Richardson, *Catalogue of Scottish Coins in the National Museum, Edinburgh* (Edinburgh, 1901). Cited as Richardson or Rich. The gold in pl. 2, A–G here are Rich. James V 36, 37, B.4, Rich. 39–40.

⁹ Stewart.

December 1542. The design on the reverse of the bawbees with its novel crown-girt saltire is too close to that of the unique pattern ducat dated 1539 (pl. 12, A-B, B.1a fig. 750) to have been used before this was abandoned; the designs for billon had hitherto been kept distinct from those for gold or silver. A crowned shield like that on the pattern's obverse was then placed on the reverse of the ducat's striking portrait of the king wearing a bonnet (a low cap embroidered with jewels to resemble a crown)¹⁰ and a heavy gold collar of thistle-heads like that which had surrounded the pattern's shield.¹¹ This ducat is still dated 1539, from a single obverse die both with and without a pellet to the left of the field (B. figs. 751 and 752). The obverse die dated 1540, simplified by having a chain instead of a collar, was used with the previous reverse die and a new one (B. figs. 753 and 754). In 1540 matching two-thirds and one-third ducats were also struck; apparently each from a single pair of dies, though the back of the head in pl. 12, G differs from B. fig. 756. Some gold is recorded as struck in 1541 and 1542, without changes of date, probably, besides possible crown pieces.

The crowned thistle-head on the obverse of the bawbees was no less an innovation (revived on our '5 new pence'). The I and 5 that flank it are like those beside the shield on the ducat fractions. The crown is very like that on the ducat's reverse and appears to be the same on through Mary's class I. It is also that of James's latest extremely rare 'abbey crown'.¹² Close inspection of well-struck bawbees suggests that not one but several seemingly long-lasting punches were used for it – a cross with a short stem, a U-shaped double leaf for the sides, perhaps a single crescent for cusping, and bars for the hoop (pl. 12, 26); exceptionally a vertical guide-line may be seen at the sides (pl. 12, 19). The letter G is also composite, with the vertical stroke punched separately (cf. (pl. 12, 28-9) horizontal on the Cs) like the tail of the Q on the crowns.

Alongside innovations, traditions persisted long in the Scottish mint. Many of these bawbees have an annulet to the left of the obverse field. This had some traditional significance in the mint's operations, for it was put on the 1540 ducat and two-thirds ducat, replacing the pellet added to the 1539 ducat die, while the one-third again had a pellet. The preceding groats frequently had a 'trefoil' of pellets similarly placed, and at least once an annulet (B. fig. 715). On James III's three-quarter-face groats half a century earlier such an annulet was quite frequent (Stewart class VI e-g). It seems that a quarter of the Rigghead bawbees were struck before an annulet was begun on them; apparent early examples (B.3 and Rich.76) are illusory. Thereafter it was left off from one in ten, which may be rather too many to be accidental, for it was obvious and could be corrected. Of two dies with the annulet above the 5, one has perhaps been 'corrected' by having it placed above the I as well (Rigg 204 and 211, pl. 12, 18-19). The device was not continued under Mary. A very inconspicuous privy mark, three tiny dots in the field, occurs on one reverse (Rigg 228-9, pl. 12, 23), and twice similarly under Mary (p. 123). A dot in the letter O as on the two-thirds ducat recurs briefly on the bawbees (pl. 12, 16).

The small fleur-de-lis initial-mark on the reverses harks back to the gold unicorns of James IV, the large ones in the field to perhaps still earlier groats. They came immediately from the pattern ducat, from which the crown initial mark and the thistle-head were used on the quarter-bawbee. The crown for the 'regal saltire' is again the same as on the pattern, both sides of the half, and the reverse of the quarter. It is not clear whether it was composite or from a single punch. On the two-thirds ducat it was used for the crown above

¹⁰ H. Bennett, 'The Scots Bonnet' in *From the Stone Age to the 'Forty-five'*, edited by A. O'Connor and D. V. Clarke (Edinburgh, 1983), pp. 546-66 (548-50). In 1538 James, in Paris for his marriage, had forty diamonds set in a bonnet, possibly the one depicted: *Accounts of the Lord High*

Treasurer of Scotland, (cited as LHT), edited by J. Balfour Paul (Edinburgh, 1907), VII (1538-41), xv and 14.

¹¹ See also note 20.

¹² AS 900; Stewart, p. 202 and pl.xxii, 302, 'Type V'.

the shield, with the separate addition of an arch of double lines and a tiny pellet above each cusp (**pl. 12, F**). On the half-bawbee's obverse an arch was similarly added, and on some an indication of the hoop's circuit below. The design at least barely changed on through the first years of Mary's bawbees.

Some letters from the ducat fount, originally the crowns', occur sporadically, notably the R with reversed-S foreleg such as comes again on Mary's very first bawbees (fig.1.1). It has been noted in James's issue on some dies in what are here called varieties (a), (b) and (d), in the latter rare, and is the characteristic of (c). The half-bawbee letter punches seem mainly the same as for the two-thirds ducat. Altogether it is likely that the first dies for the bawbees and half-bawbees were made concurrently with those for the ducat and its fractions in 1539–40.

Classification (see also Catalogue)

The striking sequence of these bawbees is not of much consequence, given their short period and few obvious changes, but the somewhat erratic order now obtainable from details of the obverse crown and of the lettering shows that Burns' brief list should be reversed. That crown is, as mentioned above, like that of the ducat's reverse, but the arch has a second line often lost in the border. At first the hoop (unlike that of the gold but like the crowns on the placks) has the whole circuit indicated as seen from below, and the interior was sometimes hatched (**pl. 12, 1**). The cusps then had no pellets. Soon the line for the back of the hoop, apparently always faint, was reduced to a small hook at the side, and before long removed entirely. This logical progression is confirmed by successive damage to the letter N on the reverses. The use of this and other criteria is not always straightforward and they are often not clear. In the beaded border a large pellet, as on the ducat, forms with the initial cross in the inscription an orb-and-cross finial for the crown. There are variations in the size and thickness of this cross, which standardised to thin and relatively large.

The first major variety (a) is, however, defined by the three-pellet stop in the reverse inscription (**pl. 12, 2**; B.5 fig. 776). It comprises a fifth of the Rigghead sample (26), and is followed in variety (b) onwards by a single-pellet stop. Exceptionally, as on B.4 fig. 775, a three-pellet reverse not only accompanies an obverse of variety (c) but has the 'sharp N' which has lost its lower front serif (**pl. 12, 10**), so that temporary re-use of the stop might be deduced, if not error. But the sharp N does already appear sometimes in the second of the two subdivisions of (a). The distinction between the pictorially backward-tilted crown showing much of the interior (i) and that with mere side-hooks (ii) (**pl. 12, 5**) may not be entirely chronological, if only because of ease of encroachment by the thistle-top.

Variety (b) does not have a distinctive obverse. Its single-pellet reverses are twice combined with obverses that are also known with their doubtless original three-pellet (a) reverses (**pl. 12, 3–4**). (The absence of a central bar from some of the lis suggests that they were made up from several punches.) Another similar obverse from Rigghead, is the only case of the shorter ending ORV, due perhaps to 'correcting' the error SOCOT. One of Rigghead's three examples of (b) with normal R on the obverse has a correction on the reverse, made by striking ID over DV (**pl. 12, 6**). On B.3 a double-struck crown makes an imaginary annulet.

Variety (c) is a little more frequent (7 in Rigghead). Its obverse crown still has some sign of the hoop's interior, but it has become normal to add pellets to the cusps. The annulet now also begins; dies without it may be combined with three-pellet (a) reverses (**pl. 12, 9–10**), so too B.4. Perhaps the first use of the annulet was on the exceptional obverse die (found with both sharp and complete N reverses), which has it inconspicuously at the very edge of the field (**pl. 12, 11–12**, N sharp; B.-), as on the ducat. Another has it high beside

the crown, from which the arch has been omitted (**pl. 12, 13**, B.2 fig. 773 etc, N complete). This die has the peculiarity of a dot in the letter O, as on the two-thirds ducat (cf. **pl. 12, 16**). With ordinary O, and an annulet (and so not (a) or (b)), one Rigghead obverse has the crown's pellets omitted (**pl. 12, 14–15**). Its annulet is closer above the I, as became usual.

On much the most numerous (87) of the Rigghead bawbees of James V any sign of the hoop's interior was eliminated. Of their three tentative divisions variety (d i) is that in which the letter N is complete or more usually sharp. The position of the normal annulet throughout can only arbitrarily be described as medium or low above the I; high is less common. A die with a low annulet larger than usual has the ducat R (**pl. 12, 21**). The annulet may be hardly visible (not struck up, as clearer duplicates once show), but may be omitted as the crown's pellets certainly are sometimes. Probably also accidental are more obvious exceptions, the dies already mentioned which have the annulet above the 5 (**pl. 12, 19–20**), found with two unbroken N reverses, and above both I and 5 (**pl. 12, 18**). (It should be noted that Rich. 76 in (a) has only a phantom annulet above its 5.)

When the sharp N breaks further (**pl. 12, 23**) and then becomes squarely truncated (**pl. 12, 27**), a later stage is evidently reached, variety (d ii), which is not distinguishable by other criteria. The confusing omissions of the crown's pellets or of annulets (**pl. 12, 24**) continued occasionally. Two extra annulets have once been punched, beside and below the I (**pl. 12, 29**). A larger-sized annulet occurs several times in Rigghead, once on a coin (248) that is heavier than normal but which duplicates the obverse of B.1bis fig. 772, which is of average weight. The three-dot privy-mark (p. 122) is known with two Rigghead obverses (**pl. 12, 22–4**) and on a duplicate. Variety (d ii) is represented by 59 of James's bawbees from Rigghead, almost half their total, and among these there is frequent duplication of obverse dies, including 3 quintuples and a quadruple out of 13 multiples noted. (Some identities were probably missed, giving too many singles.) Presumably this indicates some special circumstance during the formation of the hoard. Of that there is some confirmation from more evenly spaced duplication within varieties from other sources. The high representation at Rigghead of the class I bawbees of Mary (p. 136) is further evidence that much of it was put together in 1542 to 1545.

A final variety (e) (**pl. 12, 30**) is distinguished by the return and regular use of the ducat R, and of a large C and G that had been used occasionally in (d). These letters and the M, by this time with a shorter left leg, continued into Mary's class Ia, but the broken N did not. A curious tendency was the multiple punching of the annulet. There were only 8 of variety (e) in Rigghead.

James V's half-bawbees (**pl. 15, 127–34**)

Very few half-bawbees were issued, to judge from the duplication of obverse dies – one even among the 6 specimens from Rigghead. In the total miscellaneous sample of 34 coins studied (including photographs) 8 obverse dies are duplicated and 7 occur once, suggesting not more than about 20 originally. Variations such as the position or omission of the annulet seem to have had even less deliberate significance than on the bawbees. The design was reduced in size by smaller letters, the contraction of R(EX) and omission of the two large lis, but the crown on the reverse saltire appears to be the same as that of the bawbees, and with additions was the same also on the obverse. Changes in the hoop follow those of the bawbees; two obverses show an oval interior, which is reduced in four or five cases to side-hooks or just one. These all have a small initial cross in the legend, here used to denote variety (a) (**pl. 15, 127–31**). Obverses on which there is no sign of the crown's interior have almost all a considerably wider and thinner initial cross – variety (b) (**pl. 15, 132–4**). A slightly broader G is much commoner in (b), but is only a die-sinker's tendency and has to be rejected from classification. For the shape of the void varies and the upright,

struck separately, may leave the lower tip of the basic C projecting from a narrow G.

The original letter punches, including an R that resembles a B, seem to be those of the two-thirds ducat, as also the smaller cross. Variations in the letter A have not been found helpful, but a pellet-like lob-top has been put at the end (pl. 15, 132 B. fig. 777). The letter V has generally lost all or part of its right upper tip. Even the complete crown interiors are accompanied by broken or breaking V, while the complete letter may be beside side-hooks. Conceivably it was refurbished only to break again. The saltire is grained (pl. 15, 130).

In (a) one die has a triple-punched annulet (AS 974), another VVM in monogram and evident composite G (pl. 15, 129, with four reverses), while there is also one ORV (pl. 15, 131). In (b) one die has an annulet above the S (pl. 15, 134); though an obvious attraction for collectors who acquired five specimens including B.2a fig. 779, it is represented by a further two from Rigghead (HS 975). There are again four reverses with it.

James V's quarter-bawbee (pl. 15, 135-6, 135a-6a)

The obverse of the unique quarter-bawbee (B.-, NMS ex Lockett) is partly double-struck and its centre now largely blank. However, as Stewart saw, its design is novel.¹³ At about four o'clock there are two overlapping impressions of the thistle-head used above the saltire on the pattern ducat, and a slight bump further round confirms that there may well have been three heads 'disposed tripodially' and radially (unlike those vertical on James VI's 1597 twopenny and penny (B. fig. 970-1) by another James Achesoun). The reverse is like the bawbees', the crown on the saltire again from the much-used punch or punches. The crown initial mark is the same as on the ducat pattern. The C and G punches at least were the same as those of the one-third ducat. In view of the estimated small number of half-bawbee dies, there may have only briefly been a very restricted issue of the quarter, which was contracted for at the same time.

Historical records

Mrs Murray has recently drawn attention to the decision in 1538 to issue a new alloyed 'penny of three penny fine' to be current for six pennies. This was embodied in a royal letter of 7 August and in the subsequent tender dated 16 August accepted from Richard Wardlaw.¹⁴ There were to be halfpennies and quarters, but their proportionate quantities were not indicated. The detailed equipment which Wardlaw expected the Treasurer to supply and maintain included twenty anvils, sixteen small balances and sixteen silversmith's benches. Wardlaw and the other officers were to have the mint's dwelling and workshop accommodation at Holyrood. The latter at least was in regular use already, as can be seen from the annual profits on the coinage recorded by the Treasurer from before 1530 up to 18 April 1538, apart from two possible interruptions. Indeed as the sum for the final short period (table 1),¹⁵ is rather higher than for almost all the previous full years, there may have been some crowns and a last intensive striking of groats, and perhaps largely of the one-third groats introduced then or not long before. Contrary to Burns' view,

¹³ I. H. Stewart, 'Two Scottish coins of new denomination', *NC* 6th Ser. 20 (1960), 196-9, fig. 2; Stewart, *Scottish Coinage* pl.xxii.300.

¹⁴ J. E. L. Murray 'A tender for the Scottish coinage in 1538', in *Later Medieval Minis . . . Eighth Oxford Symposium on Coinage and Economic History*, edited by N. J. Mayhew and P. Spufford, BAR Int. 389 (Oxford, 1988), pp

222-28; *Acts of the Lords of Council in Public Affairs 1501-1554*, edited by R. K. Hannay (Edinburgh, 1933), pp 472-3.

¹⁵ LIII VI (1531-1538) - VIII (1541-1546). X (1551-1559) (1913), previously extracted in R. W. Cochran-Patrick, *Records of the Coinage of Scotland* (Edinburgh, 1876), I, 59-60. Cited as C-P.

it is now thought that the last coins of the silver issue were those with colon stops, with one-third groats perhaps last of all as they run on typologically from the groats.

The change to base silver (and to ducats, though this is not in the records) coincided with the appointment as Master of the mint on 13 August 1538 of Alexander Orrok of Silliebawbie, after whose territorial name the bawbees seem to have been soon called. He took the place of James Achesoun, who had produced the one-third groat and who was said long afterwards to have refused to coin the bawbee, its replacement. According to the same source, c.1582, Achesoun had to return as master coiner in 1540 because Wardlaw and his immediate successor Richard Young had been unable to perform their task.¹⁶ Despite this assertion the royal profits as paid to the Treasurer are evidence of more continuous coining, as summarised in table 1, with estimates of the volume of coinage added.

TABLE 1

<i>From</i>	<i>Mint period, and gold bullion</i>	<i>Payment of profit</i>	<i>Estimated bawbees</i>	<i>(crowns & ducats)</i>
Achesoun	15.2.37/38–18.4.38 (LHT period 24.3.37/38–24.9.38)	£150 12s 9d	mainly $\frac{1}{3}$ groats?	
Orrok	20.5.38–18.8.39 (LHT period 24.9.38–17.9.39)	£2,254 18s 4d and £76 with Wardlaw	273,066 (if £2,000 for b.)	??
Orrok	18.8.39–2.9.40 (LHT period 17.9.39–2.9.40)	£1,421 6s 4d	194,057	
Young & Orrok	do. from 17lb. 14 oz Troy [c.108, 125 grains alloyed]	£825 1s 6d		1,224
Achesoun	2.9.40–7.9.41	£4,785 9s 6d	560,037	
Achesoun	do. from c.153 oz [c.76,633 al.gr.]	£402. 8s. 10d		867
Achesoun	7.9.41–16.8.42	£3,536 19s 6d	413,927	
Achesoun	do. from 197 oz	£503 10s 10d		1,134
	16.8.42–12.12.42 not known		?	?
			1,441,087+	3,225+

Note: Non-gold is estimated as all whole bawbees. Profit on bawbees for 1538–40 is reckoned at £120 per stone bullion (16,384 coins), and from 1540–41 at £140.¹⁷ Gold bullion is reckoned at 24 carats, and ducats at 23 carats though they seem to have been reckoned 22 carats in 1596.¹⁸

Few, if any, coins need have been struck in the latter part of 1538; it is particularly unlikely that one-third groats continued to be struck after the bawbee was decided on. The preparations for the new coins and their designs could well have lasted into 1539, especially as Wardlaw was not fully experienced.¹⁹ So although the bulk of the 1538–39 payment must relate to bawbees, the quantity involved could well have been struck during five months of 1539, and the suggestion made on p. 122, that the rejected design for the ducat preceded the (final) design for the bawbee, is quite feasible.²⁰ A total issue of James V Bawbees,

¹⁶ Hopetoun MS (BL Add.MSS 33, 531 f.250–8); C–P I, 96.

¹⁷ Murray, 'A tender for the Scottish coinage', p. 226.

¹⁸ Burns II, 250.

¹⁹ As note 17.

²⁰ Mrs Murray suggests (*in litt.*) that the gold piece might not be a pattern but a restricted issue in connection with the Order of the Thistle. She notes the statement by Sir George Mackenzie, *Observations upon the Laws and Customs of Nations as to Precedency* (Edinburgh 1680), p. 99, that the knights of the Order when attending service in the cathedral of St Andrews [therefore before the Reformation of 1560]

had worn a saltire 'environed . . . with a crown' as a badge. But it seems that there is no other evidence to connect the device with the Order, which indeed is now generally thought not to have existed as such before it was 'revived' in 1687: C. J. Burnett, *The Green Mantle* (Edinburgh (NMS) 1987), p. 4 and 'The collar of the . . . Order of the Thistle', *Journal of the Orders and Medals Research Society* 26 (1987), 149–68. T. Innes [later Lord Lyon King of Arms] took, however, a flexible interpretation of what constitutes an Order in 'The foundation of the . . . Order of the Thistle', *Scots Law Times*, June 1937.

subsuming halves and quarters, at somewhat over a million and a half spread through more than three and a half years is smaller than estimated for less than three years in 1544–47 under Mary (table 4). The comparable figure of upwards of only 3,225 ducats from, it now seems, only two obverse dies, with one each for the very rare half and extremely rare quarter ducats, gives a very low output per die for the softer metal.²¹

Mary's bawbees, 1543–1554

Classification (pls. 12–15)

(see also *Catalogue*)

The small design changes in the larger features of Mary's bawbees, over a period of a dozen years, were no doubt in the main intentional and of significance within the mint's accounting and accountability. Burns used the crowns on the obverse to distinguish eight classes, noting varieties of crown within some, and specifying a few of the changes of lettering. The beginning he identified by continuity in crown and letters with James's issue, and the end by a similar sharing of punches with the silver struck in 1553. But within the series, he wrote deprecatingly of his own results, 'there is no possibility of fixing the order of the bawbees of Mary'. This remains true, particularly of many varieties within the numbered classes which may now be more clearly indicated – by numbering as a (i) etc without necessarily implying their sequence, and by some drawings (figs. 1–5). Study arising from the Rigghead hoard has, however, found some confirmation of Burns' order from further internal links.

Few real alterations are now put forward. One is the recognition that Burns class 1, much better represented at Rigghead than in collections previously, covers several major subdivisions equivalent to other classes, including the coins minted exceptionally not at Edinburgh but at Stirling. So it may be called group 1. Three other groups are proposed – 2, classes II–Va; 3, classes Vb–VIIa; 4, classes VIIb–VIII. It is also suggested that two varieties should lead into class VI instead of coming at its end.

The possibility should be kept in mind that small features may have distinguished say two workshops striking simultaneously. Because of the similarities to be expected in the work of any one punch-maker the forms of the letter-punches and of the initial mark fleur-de-lis (which may be composite) provide guidance that is hard to follow, and has been used rather selectively. Die comparison has concentrated on obverses. The number of dies was usually too large to allow the available sample to help by die-linking. Details are in practice often unascertainable, not just because of wear but because of frequent double-striking, and of poor striking so that the centre is weakly struck-up. The thistle is thus a less useful feature than might be expected. For these reasons too, and for want of access to the Coats collection, Richardson in his catalogue was often unsuccessful in correctly matching coins to Burns' classes. There is, further, a scarcity of bawbees which retain even a substantial part of the outer beaded margin; as well as the irregular flans occasionally evident, clipping may be suspected even for billon. The bawbees from Rigghead, though little worn, averaged about 7 per cent below the nominal weight of 29.45 gr.²²

²¹ Comparably low figures were suggested for 1555–58 by J. K. R. Murray, 'The Scottish gold coinage of 1555–58' *NC* 7th ser. 19 (1979), 158.

²² The absence of a 'remedy of weight' from the 1538 contract and the averaging of profit on light and heavy pieces provided for in the 1547 lease (see note 34), suggest that no very close check was kept on the weight-range of individual

pieces; Murray, 'A tender for the Scottish coinage', p. 226. Rigghead unclipped bawbees averaged 27.5 gr. (302 coins); ranges James V 34.0 – 19.58 gr., av. 27.25 gr. (118 coins), standard deviation 3.05; Mary class 1 39.93 – 20.77 gr., av. 27.67 gr. (110), s.d. 4.09; class II–VIII 38.195 – 20.88 gr., av. 27.65 gr. (74), s.d. 3.72.

Privy marks and errors

The pellet sometimes noted by Burns as above the obverse crown is, as on James's bawbees, simply the orb of its finial which is completed by the cross in the inscription. A few dies, however, would seem to have been made identifiable by various additional marks. Short rows of tiny dots have been placed in the upper triangle of the saltire or to its side in group 2 (class II Rigg.425; Va B.36bis fig. 840), as comparably once under James (p. 122). There is a single pellet similarly placed once in class Ib(iii) and once in II (B.15 fig. 829 – not B.13), but one on Rigg.427 and die duplicates is illusory, due to a lis initial mark misplaced then double-punched (**pl. 13, 56**). In IIIa there is a stray pellet in a corner of one obverse crown. Occasional single pellets centrally on the thistle-head or on the reverse crown's hoop (**pl. 13, 55–6 and 88**) are presumably just the mark of a compass laying out the beaded inner circles. In group 3 an obverse initial cross has been quite exceptionally duplicated at the end of the inscription by surrounding the stop with four dots (Braeside, Vc). A pellet stop within a word was perhaps significant – M·A in class IIa (Rich.59), in III^a (Rich. 79bis), and again in Va (B.35 fig. 839); MA·R in Ib(iii) (*ex* Murray), in VIIa (B.66 = AS 1053), and in half-bawbee Type B (ill.146); OPPI·DVM in Vc (Rich.91). The pellet in the letter O earlier (p. 124) may be comparable. In Va G·I is probably only a mistake for GI· (Rigg.471).

Crescents or annulets have been inserted several times in group 1 – M·R (B.2 obv. = B.3). RE·G (B.5), twice in the obverse field below M (B.10 = Rich.52, and Rigg.351). There are pseudo-crescents made by double-punching stops in a class Ib(iii) obverse (B.9 = Rigg.352). A gapped annulet below the saltire has been noted in group 4 VIIb(iii-v) – three dies with it complete (Rich.112, **pl.14,118**) and two seemingly with it obliterated (Rigg.499 and *ex* Lockett).

There are several misspellings not always corrected in group 1 (Rigg.338, **pl. 12, 34**), besides cinquefoils omitted (Rigg.350, **pl.12,36**). In Vd BV is punched over GI (Rich.128, **pl. 14, 80**), but 'errors' on Rich.139–40 are due to double-striking, as in VIIb (Rich.145, **pl. 14, 115**). The reverse crown may be upside down Ib(iii), VIa(iv) (**pl. 14, 87**), and VIc(ii), all Stewart collection. In VIb the central bar of the lis initial mark may be omitted.

Forgeries

Garbled inscriptions are one feature that the only two counterfeit bawbees seen have in common. They are also both of copper. One with its main details tolerably well drawn and clearly copying class I is in the Stewart collection, from Seaby in 1953. The other, now in the National Museums from J.K.R. Murray's sale, is not well drawn but its obverse inscription is partly intelligible MA . . . ORVI, and a narrow M resembles that of class VIa-b. (See also footnote 49.)

Contractions and stops

The common variations of stops in the inscriptions may conceivably have helped the mint to identify dies. Those recorded by Burns and Richardson are not regularly reproduced in this paper. It may, however, be convenient to note that in group 1 the standard contraction SCOTORV was intended to have a pellet above the V as a contraction mark; it is present where ascertainable, B.2–11 being uncertain or incorrectly given in this respect. In group 2 this mark is omitted or sometimes becomes a following stop, V· particularly in class III. In group 1 SCOTOR· has been seen once in Ib(iii) (**pl. 13, 45**), in group 2 twice in IIa(ii) (**pl.13,51**) and (c) (Rigg.435), once with five reverse dies in IVa (Rigg.460); and without the final stop once in II, a(i), also once each in IIIa and Va(ii) (B.21 and Rich.87).

James's SCOTORVM is frequent in class Ia, recurs rarely in group 2 – IIIc, IVa and Va(i) (B.19, Rich.74, B.32) and is standard in groups 3 and 4.

The original standard form 'D·G·REGINA', has variants in group 2, 'D:G' and 'DG' never indicated by Burns. It was changed for group 3 to 'D·G·R', the stop between D and G being often so high as to appear omitted. The formula was enlarged for the later part of group 4, class VIII, to 'DEI·G·R' (see p. 134) except for Rich.149 (pl. 15, 125). Apparent D GRA in VIIIb(iii) (Rich.140) is merely due to double-striking.

A stop at the end of the inscriptions is quite common in group 2, most frequently in class III. In group 3, rather than final stops only, a stop at both ends of the reverse inscription (occasional in class II) is common in Vb-VIa(i) and sporadic into VIIa(i). Corresponding, sometimes simultaneous, obverse stops (shown in the catalogue as '+') are common into VIa(i) and occur in VIb(ii) (Rich.107); this pattern supports the new position of Vd and VIa made on other grounds. Such pairs of stops recur in group 4 in VIIIb(i-ii) on the reverse, and exceptionally on the obverse (Rich.147). An anomalous colon before the reverse legend occurs in Vb(i-ii). Omission of all stops on the obverse is occasional in group 2 (IIa Rich.62 and Rigg.419; IIIa Rigg.441 and 452; Va(ii) St. coll.; Vb(ii) Rich.96) and is common in group 4, VIIb.

Relations to the gold issues

Only a very few twenty-shilling pieces dated 1543 are known, all from a single obverse die (B.1–2 fig. 809–10).²³ The composite crown over the MR in monogram on the reverse is as that showing part of the interior on James's half-bawbees' obverse, while above the obverse shield it has 'hooks' and no arch. Its orb is present not only below the cross initial mark on the obverse but below the reverse's sun initial mark. This visual malapropism was copied from James's type V abbey crown – the correct form goes back to his class I groats. The main punches for the twenty shilling's obverse and reverse crowns were probably also the same for those on Mary's type A half-bawbees, and the letter punches as those of A(i); for the gold's Ls in ANCILLA the G's vertical was used as horizontal stroke with an I. *Pace* Burns the R of the twenty shillings is not like that on his crown B.1, but a parallel to that of bawbees class Ib(i), which should make it slightly later than Mary's first abbey crowns.

These, which are undated, follow the type V crown in most details, including the cross-less orb. They have, however, single-pellet stops, and cinquefoils at the sides of the shield. The letter fount is usually that of her bawbees closest to James's, here class Ia. Of the three such obverse dies known only one, with its reverse, is not extremely rarely represented (B.3 = Rich.33 fig. 111 = AS 976 = obv. B.2 and revs. B.4 and HS 997). A fourth obverse die, two examples with different reverses (B.1 fig. 807), has the same letters as bawbees class Ib(iii), and the lob-top of its A is still unbroken. So it is not earlier than autumn 1544 nor much later. One may add that though the obverse crowns of these dies vary in width as Burns noted for B.1, they are from the bawbees' set of punches differently spaced, except for the lines of the hoop, and guide-lines in two cases at the sides (B. fig.808) (see p. 130). All told it would not seem that gold then took up much of the mint's time.

The gold of 1553 was a more extensive issue, studied thoroughly by J. K. R. Murray along with the silver and some bawbees and halves.²⁴ He summarised them in tabular form, showing nine obverses of two types for the forty-four shilling pieces, five obverses for

²³ J. E. L. Murray, 'The first gold coinage of Mary, Queen of Scots', *BNJ* 49 (1979), 82–86.

²⁴ J. K. R. Murray, 'The Scottish coinage of 1553', *BNJ* 37

(1968), 98–109; cf. *idem* 'The Scottish gold coinage of 1555–58', *NC* 7th ser. 19 (1979), 155–64. See also note 46 below.

four-shilling testoons, and thirteen for the twenty-two shillings. Of particular significance for the bawbees, as he pointed out, a cinquefoil-punch with a broken leaf on forty-four shillings type IIa recurs on some class VIII bawbees. Further, along with it there is a D lacking the upper serif, a feature of twenty-two shillings type II, its last two dies, possibly separated by a clear interval from the much larger type I, so possibly not really struck in 1553.

Group 1

The obverse crown of this group (fig. 1.1) is from the same punches as James's bawbees; the cross, outer florets, lines of the arch, hoop, and semi-circles seem to have had separate punches. The arch was probably intended to be two-line throughout. The crown on the reverse continued to be the same as on James's billon (p. 122), and the saltire continued to have a wood-grain pattern, which soon generally failed to show up. The variations of letter forms are considerable, but analysis of them here has been selective and incomplete. It is primarily by the form of the initial lis on the reverse that the new main subdivisions are distinguished. The Stirling bawbees can be related by their letters to one of these.

Class Ia has the same lis initial mark, thistle and open \bar{A} with barred and peaked top as were on James's bawbees, the 'ducat R' as on his latest (pl. 12, 31–2, fig. 2. 1). The ending ORVM rather than \bar{V} continues on perhaps half the dies. An early start in 1543 seems likely. Slender cinquefoils with a pellet in the centre, which Burns placed second, are the peculiarity of Ia(i); those without this pellet appear at first less numerous, Ia(ii), but went on through Ib. Ia(iii), only known from a later mule, has a closed lob-top A and some larger letters (pl. 12, 33).

Class Ib has a very small lis initial mark, and a new arrangement of the dicing on the thistle which to begin with has fine projections from the lowest central triangle (pl. 12, 34–6). Its first new R with straight foreleg, originally extended by a fine horizontal tip, can be distinguished from later forms by the circular drill-hole that formed its fork and adjoining serif-projection (fig. 2.2). The ending ORV becomes normal. On a number of specimens the new R is on the reverse only; that some of their obverses keep the form ORVM, and probably all keep the earlier thistle, shows that a(i-ii) obverses continued for a time, but that perhaps the use of the previous lis reverses was specifically discouraged. As well as the new R, a mark of b(i) is an open \bar{A} which has no central peak and soon loses its left projection (pl. 12, 34, and see pl. 13, 38). Occasionally there is a round O (pl. 12, 34). The use of an A like that of a(iii) but larger, constitutes the still scarce variety b(ii) (pl. 13, 37).

Stirling-mint bawbees, class Is(i-v) (pl. 13, 38–44), come in at this point. They were the first coins after James III's Aberdeen groats not to have been minted in Edinburgh, or at this time more strictly in the precincts of the palace of Holyroodhouse in the suburban burgh of the Canongate. They reflect the regency controversy of summer and autumn 1544 (see p. 139). An ostentatious cross-potent having plain crosses in the angles replaces the saltire on the reverse beside the name of the town, and its initial mark becomes a crown. The obverses are just as those of Edinburgh class I as Burns noted, but no connecting die-links have yet been recognised. There is, however, substantial duplication of dies even among the twelve Stirling coins of the Rigghead hoard.

On the obverse dies what Burns called the old open \bar{A} is the new variety belonging to class Ib(i), three times in its unbroken form, Is(i), and three times broken, Is(ii) (pl. 13, 38–9). Two of the latter and one of the former are represented in the sample of eleven studied by a single coin each, compared with only four singles among the forty-two coins with a closed A, so they may have worn out quickly. A round O little used in Edinburgh, in Ib(i), accompanied the open \bar{A} but lasted more than twice as long. Perhaps some obsolete obverses

and punches had been taken from Edinburgh. The closed A at Stirling is a lob-topped form like that of b(ii) but wider; its beginning marks Is(iii) (pl. 13, 40). For about half the Stirling issue, Is(i-iii), the M and R beside the thistle and in the legends are the same as in Edinburgh Ib(i-ii), then they are replaced by the slightly larger ones which characterise b(iii) and s(iv-v). The R is the more readily recognised as instead of a curved fork it has an acute angle (fig. 2,3). The round O seems to have been retained for only one pair of the new R dies, Is(iv) (pl. 13, 41-2), before being replaced by the constricted oval style on seven obverse dies in the sample, twenty coins, Is(v), (pl. 13, 43-4). A peculiarity perhaps of one die-sinker seen particularly on Stirling obverses, but also occurring through Edinburgh Ib(i-iii), is that the pellet for the orb is often placed on and not below the stem of the initial cross. With this there is a tendency for the RV to come very close together, or even overlap. One may conclude that the Stirling dies came between Edinburgh Ib(ii) and Ib(iii), and were produced by the same craftsmen.

Edinburgh class Ib(iii) (pl. 13, 45-6) comprises almost all of the numerous bawbees of group 1 struck after November 1544, when the regency quarrel was patched up. As the small lis initial mark distinctive of Ib(i-ii) is resumed after the Stirling interlude (losing only after a while its lower tip), b(iii) is distinguished by the R (fig. 2, 3) and larger M which are those of the later half of the Stirling minting. Rigghead produced a b(iii)/b(i-ii) mule, as the difference between the Ms and Rs shows. There seem to be at least two variant closed As in b(iii), one already normal in the Stirling coins, among which too the lob-top often appears broken, but a systematic arrangement has not been achieved; refurbishing of the punch or punches is likely. The tendency to increase the size of the letters had continued, with exaggerated openings. The sharp-forked R finally appears to be a P with an inserted foreleg (fig. 2, 4, see pl. 13, 48). A few dies with possible privy marks have been mentioned on p. 128.

Class Ic seems to have been small – one coin each in Burns and Richardson, the latter duplicating the obverse of one of the seven in Rigghead. Its distinctions are a new, larger lis initial mark and a new cinquefoil, neither previously illustrated. These features are accompanied on the reverses of c(i) by the final 'patched' R of Ib(iii) (pl. 13, 48, fig. 2, 4). A new R was used for the known obverses (pl. 13, 47), and for some reverses – c(ii). It was probably in origin B-shaped like that on James's half-bawbees (pl. 15, 133), but usually has a tip added at various angles (fig. 2, 5), sometimes horizontally.

Group 2 (pl. 13, 49-70)

One Rigghead coin provides confirmation of Burns' next step, for it mules a Ic(ii) reverse with a class II obverse. Classes II-Va are so closely related that they may be called group 2, and except for the beginning and end their numbering is arbitrary. That there was a distinct fresh start is indicated by the new letter punches, by the lis initial mark on the reverses and the fatter cinquefoils, as well as by the details of the crowns on both faces. The initial cross on the obverses is sharp at the foot.

On the obverse crowns the long-lasting central cross was replaced by heavier forms, Burns' II cross fleurie (fig. 1, 2, pl. 13, 55) and III cross fourchée. Here the common IIIa (B.fig. 834; pl. 13, 58) is distinguished from IIIc which has pellets on the cusps, apparently a short revival (B.fig. 833; fig. 1, 5), and from IIId which has a 'decorated' arch as if in transition to class IV (B.-; Rigg.459, pl. 13, 61). Class IV's crown is smaller as well as spiky, IVa having a central trefoil and two-line hoop, IVb a cross-like trefoil and single-line hoop (fig. 1, 6-7, pl. 13, 63 and 65). Class Va's crown is larger and its cross is partly squared-off (B.fig. 838; fig. 1.8). When the arch is still decorated it is called a(i) (pl. 13, 66 and 68), plain is a(ii) (B.fig. 839-40; pl. 13, 69), and a(iii) (B.fig. 841) is when the arch is omitted.

Burns did not comment on the reverse crowns, but although their incidence appears in part irregular, and they are now often not ascertainable, they could have been significant to the mint. Possibly they indicated workshops, for other features are also concurrent in group 2. The centre of one form is a simplification of the obverse crown's cross into a 'club' flanked by large pellets, which may be circular or irregular. This (fig. 1, 3 – coded p) is a characteristic of class IIa (B. fig. 829; **pl. 13, 50 and 52**). It may stray onto the obverse with a plain arch added to obscure the probable error – three dies including B. 27 fig. 836, part of Burns' class IV, here IIb (**pl. 13, 53**). The second reverse form, characteristic of IIc, is distinguished by a central trefoil in two or more variants, one resembling (p) – both coded (t) (fig. 1.4, **pl. 13, 56–7**, cf. B. fig. 830). It was used once as an obverse in IIb, B. 28 (**pl. 13, 54**). These two forms of class II's reverse crown were used in the rest of group 2: (t) in IIIa with a few exceptions and in IIIc-d (**pl. 13, 62**), (p) in IIIb (**pl. 13, 59**); then a mixture in IVa which might also be due to die interchanges not otherwise recognisable, for IVb and Va seem to have (p) almost entirely, latterly with a slimmed-down version of its 'club' stem (**pl. 13, 67**).

The letter M in two forms is the chief criterion for the separation of IIa-b and IIc, starting with the IIa(i)/Ic(ii) mule, on which the M's central indentation makes almost a right-angle and the legs broaden to the foot without a serif (fig. 2.6). The ball of the thistle, in a(i) only, has larger dicing than in class I (**pl. 13, 49**). This then becomes finer again from IIa(ii) (**pl. 13, 51–2**), perhaps at the same time as modification of the M produces projecting serifs. The other M punch apparently coincides with the trefoil reverse crown of IIc (**pl. 13, 55–7**). It has an acute-angled indentation (fig. 2.7) and, at first, serifs. Judging by the Ms there is some die-linking between IIa(ii) and IIc. The 'acute M' is then standard through classes III, IV and Va, as well as IIc, but the 'wide-angle' M recurs in IVa.

Another variable in group 2 is the lis initial mark. More than one size of punch was used for the separate petals already in IIa(i). A larger, with a drill-hole showing nearly complete on the left, has at first more of a hump (**pl. 13, 52**) than later. Its modified form is usual in IIc and on through Va; this often shows a hair-line tip on the left (**pl. 13, 56–7**). A smaller petal is more frequent in IIa (**pl. 13, 50**) and sporadically afterwards. It is usual in IIIc (**pl. 13, 60**), relatively frequent in IVa and Va (**pl. 13, 67**), and perhaps entirely absent from class III's principal sub-division IIIa, and also from IVb. A quite different lis that has straight petals distinguishes class IIIb (**pl. 13, 59** and B. 24 fig. 835).

A number of obverses in IIIa have a final stop at SCOTORV· as rarely in II and Va (**pl. 13, 69**). Reverses in III and Va often end in GF·, which is occasional in II and IV. In III indeed there is a marked tendency to have a final stop one side or the other; some have neither but to have both is less common. For SCOTOR see p. 128.

The surface of the saltire in group 2 may normally have been rippled horizontally, with a slight raised margin that tended towards the later fluted effect (**pl. 13, 56 and 60**). Instead of rippling there were sometimes vertical striations or shorter graining (see **pl. 12, 32**). Wear and mis-striking generally obscure these features. In classes III and Va it is occasionally evident, owing to less careful placing, that the saltire's arms were punched as separate rectangles (**pl. 13, 62 and 67**). In Va the cinquefoils have become smaller. As indicators of the sequence of the classes there are mules, IVb/Va (Rich.85) and Va/Vb (Rigg.484).

Group 3

Class Vb (**pl. 13.71–2**; B. 38–39), a small sub-class, marks the beginning of what Burns called the second great subdivision of Mary's bawbees, here group 3. This group is distinguished particularly by the inscription ·D·G·R·SCOTORVM instead of ·D·G·RE·GINA·SCOTORV·. There were new punches for all the letters, with the peculiarity of

reversed \mathcal{H} s. The crown on the reverse now had a central floret that remained the same or very similar on into group 4, as did apart from a few exceptions a new lis initial mark which has a three-spike foot. Hooks on the hoop of the crown are a peculiarity of Vb-d, occurring in b(ii) also on the obverse. Other changes did not take place all at once, hence Burns' numbering and order. At the start there were for a time also a reworked or new thistle, a plain central cross on the obverse crown, and larger cinquefoils.

The obverse crown for class Vc(i-iii) was redesigned as open, without an arch, and showing the interior by a more or less complete oval hoop (fig. 1.10, pl. 13, 73; B. 40-3), reminiscent of James's variety (a). Pellets on cusps and hoops may be added - Vc(iv) (fig. 1.11, pl. 13, 75; B. 44-45). For Vc the cinquefoils became smaller again than in Va but more pentagonal (pl. 13, 74), and a form of R with serifed foreleg began (pl. 13, 73). With Vc(ii) the saltire became strongly fluted, so much so that group 2's partial or slight fluting seems to have been largely overlooked hitherto. An exceptional wide foot on the lis initial mark distinguishes Vc(iii) and is found in c(iv) (pl. 13, 76). Stops at the beginnings and ends of the inscriptions are common in Vb on into VIb (see p. 129), a liking echoed by the pellets on the crown of Vc(iv). Close links are provided by mules Vb/c(i) (B. 39 and Rich.93 bis), Vc(iv)/c(i) (Rich.94).

Class Vd (pl. 13, 77-8 and pl. 14, 79-80) has been introduced to contain B. 63-64 hitherto in class VII, and some related coins, for they share features with Vc - the R with front serif, the form of thistle, and the hooked crown on the reverse. An ornamented O, as used on James's bawbees, is new. The bold 'strawberry-leaf' obverse crown of Vd(i) (fig. 1.12, pl. 13, 77; B. fig. 854) has the interior shown as if tilted, and despite the return of the arch is more closely related to those of V than to class VII (pl. 14, 107). The crown of Vd(ii) (B. 64 fig. 855) differs in having a spaced double-line arch and no indication of interior (fig. 1, 13, pl. 14, 79). The serifed R gets dropped in the course of Vd.

Class VI is large and in this is comparable to class I. In contrast it gives the impression that several designers of varying quality were now involved in the many changes of detail. It begins with B. 62 fig. 853, hitherto placed at the end but here VIa(i) (see pl. 14, 81-2); VIa(ii and iv) are not in Burns (pl. 14, 83-4 and 86-7). The ornamented O links Vd and VIa-b(i-iii), after which the plain O returns. The serifed R recurs rarely in VIa-b. A distinctive narrow M is specific to the several subdivisions of VIa and part of VIb, and with other forms of M and their tendency to break at a corner, has been used to trace various stages in class VI, not necessarily sequentially (fig. 3). The reverse crown has a two line hoop, without hooks.

The obverse crowns of VIa-c are varied, but all have cross-like fleurs on the intermediate cusps (fig. 1.14-19). In VIa(i) there is a low double-arch with a straight-line hoop, the whole being rather poorly drawn; it is represented by eleven coins from four obverse dies (pl. 14, 81-2; B. fig. 853). The accompanying thistle has a smoothed outline. A single arch and more jagged thistle distinguish VIa(ii) (pl. 14, 83-4; B. -). VIa(iii) has no arch (pl. 14, 85); here B. 52 gives a further link for the new order by having the distinctive cinquefoils of VIb(i-iii) - not fig. 848 rev. A similar but better-drawn crown, which has a strongly curved hoop and row of fleurs but no arch, forms VIa(iv) (fig. 1.16, pl. 14, 86-7), known from a single example. In VIb the thistle is increasingly jagged. The crown is arched and narrower with a gently curved hoop (fig. 1.17). Some varieties distinguished here are not readily seen or always ascertainable - crowns with sides joined to the hoop or not, and changes in the size of the cinquefoils and the ring-punch 'piercing' on them (pl. 14, 88-94). The large slender cinquefoils of VIb(i-iii) are, however, evident (pl. 14, 90-2). So too is a curious version of the obverse crown which has rectangular 'jewels' on the hoop, VIb(v) (fig. 1.18, pl. 14, 95-6). It was not known to Burns but four obverse dies have been seen, and five different reverses with cinquefoils as b(i), b(iv) and c. The crown of the common sub-class VIc is smaller (fig. 1.19, pl. 14, 97-104; cf. B. fig. 850, and 852 - *recte* B. 60). It has its arch

decorated; a variety in c(iii) has a two-line arch, anticipating the crown of VIIa. In VIc(iii) the inner beaded circle is omitted on one face or the other, or on both, leaving a laying-out hair-line exposed, as often in VIIb(iii-v).

The occasional absence of the central bar of the lis initial mark in VIb(ii) shows that it was made up from more than one punch. So possibly a narrower form was as much due to a different die-sinker as to the need for refurbishing. This variation belongs to VIc (pl. 14, 106), but occurs also in VIIa(i) (with which there are mules). Several features distinguish VIc besides the 'wedges' on the intermediate cusps noted by Burns (B. 58 fig. 851). A peculiarity of the crown is that the central decorative pellets on the arch sometimes merge to form a trefoil with the leaf-shaped top arm of the cross when it rises from the broad transom (fig. 1.20, pl. 14, 105).

Class VIIa (pl. 14, 107-10; B. 65 fig. 856) has a neat obverse crown with a two-line arch (fig. 1.21). It shares quality and details with B. 63 fig. 854 which here has been moved back as Vd, for a series of reasons already explained. The cinquefoils are as in VIc-d. A blurring of letters is frequent in VIIa-b, as occasionally in VIc, and rarely earlier. Could this have been due to the quality of the die-metal, to allowing the voids in the punches to get clogged, or to too deep and uneven punching plus wear? A drop in the standard of workmanship is apparent despite the improvement of design. In VIIa(ii) there is a different M (fig. 3.7), and a distinctive A with a nicked top begins, that is normal on the coinage of 1553. A two-line hoop returns on the reverse crown (pl. 14, 109-10).

Group 4

The slight alteration of the initial cross above the obverse crown into a cross-potent is here taken to be of political significance, as well as being one of a number of links with the gold and silver issue of 1553 (pp. 129-30). It marks the final Group, which consists of two classes, neither common.

Class VIIb has a larger crown usually without an arch (fig. 1.22-23), a new thistle, smaller letters notably an N instead of И, and two further cinquefoil punches. Obverses and reverses of VIIa may be used with the new dies, which include an obverse with misplaced inscription (pl. 14, 112-13). Once a two-line arch echoes VIIa (pl. 14, 111). The varieties VIIb(i-iii) are infrequent (and not in Burns); they retain beaded inner circles on both sides and may have a small pentagonal cinquefoil (pl. 14, 114). The extremely rare VIIb(ii) has the cross-potent as initial mark on the reverse as well (pl. 14, 115). VIIb(iii) normally has beaded circles only on one face, more open cinquefoils, and may have below the saltire a crescentic annulet or obliterated annulet (pl. 14, 116-18), also found with a VIIb(v) obverse (pl. 14, 120). The lis initial mark has become cross-like. There are no beaded inner circles on VIIb(iv) (pl. 14, 119; B. fig. 858), or on b(v) which has a double-line arch on the crown, as in VIIa (fig. 1.23, pl. 14, 120; B. fig. 857). One example has no stops on the obverse and a roughly scored thistle (pl. 15, 121).

Class VIII (pl. 15, 122-6) was discussed and fully described by J. K. R. Murray in 1968, greatly amplifying Burns' identification of close links with the twenty-two shilling gold pieces of 1553, including some shared punches that were defective (see p. 130). The inscription has been changed again, to DEI·G·R· (p. 130), with one exceptional D·G·R· (pl. 15, 124). The crown is elaborate (fig. 1.24). There are smaller letters, beaded inner circles, and three sizes of cinquefoil as reverse initial mark, VIIIb(i-iii), with others beside the saltire. Despite a general neatness, a tendency for letters to be blurred continues. The saltire in VIIIb is slender and not fluted.

Mary's half-bawbees (pl. 15, 137–64; fig. 4–5)

Concurrent with bawbees, but not distinguishable in the records, an unknown proportion of the issue consisted of half-bawbees. (There were no quarters.) Their general design is similar, with one cinquefoil only, below the saltire. The division between more or less unfluted and strongly fluted saltires was maintained, as Burns noted. But the few that have been published, notably eight by Richardson, have not presented a clear picture although they covered the main varieties now recognisable in a sample of seventy-two, of which only one is from Rigghead. Thistle-heads, perhaps more readily distinguished than on the bawbees, are here proposed (rather than the crowns in fig. 4) to identify four types. These may be correlated with the four groups of bawbees.

Type A has two main subdivisions. Its thistle throughout resembles that of James's bawbees and Mary's class Ia, and was probably the same as on James's halves, as were the obverse and reverse crowns. Type Aa (pl. 15, 137–8) has variants of a lis initial mark possibly from class Ia punches. The fork of its R is drilled like that peculiar to Ib(i) (cf. fig. 2.2). Type Ab (pl. 15, 139–45) is distinguished by a smaller version of class Ib's very small lis initial mark, generally with a dot foot. Its minor subdivisions, Ab(i-iii), are marked by three further forms of R – the commonest is similar to that of class Ib(iii), the second has a short front leg, and the third resembling a B seems to be a reuse from James's halves. This has been placed last because its only two specimens have the added stop at the final VM which is usual in the next type, and its R recalls that of class Ic (pl. 13, 47). James's decorated O, not used on Mary's bawbees until class Vd, may have been usual in type A but is generally indistinct. The M is like those of Ia.

In Type B (pl. 15, 146–7) the thistle is smaller and coarser, its form reminiscent of that of class IIc. The letter M is like that of class IIa, except once like IIc-IV (cf. fig. 2.6–7). The lis initial mark is like that of IIIa (pl. 13, 62). The sample is, however very small, only seven coins. Of these three are from one obverse die, the crown like type A; their reverse crowns are like those of classes II-IV, one of variety (p) and two of variety (t) (cf. fig. 1.3–4).

Type C's thistle accompanies a fluted saltire and reversed \mathfrak{u} (pl. 15, 146–7) so it is associated with group 3. The thistle is curious because the ball appears to be from more than one punch, primarily a large diced triangle on and around which the dicing may be widely spaced, perhaps if weakly struck (pl. 15, 148 and 155). The new obverse crown has a tall central lis and a distinctive lop-sided arch. The new reverse crown is light, with splayed sides and a stunted central version of (t); it continues right through type D. Though type C is much the most numerous, comprising nearly half the sample, it is short of obvious subdivisions, so as for class VI some letters have been invoked. An R with complete rear serif distinguishes Ca (pl. 15, 148–9) from Cb in which the R has only half a serif (fig. 5.2). Cb then covers the later two-thirds, within which there is a succession of three Ms (i-iii), complete and defective (fig. 5.3–5, pl. 15, 150–5). It seems that as on class VI bawbees the punch for this letter was liable to be so held by the die-sinker that one corner got damaged. Very slight damage to the M of (ii) may account for its appearing on one obverse both complete and defective in the same inscription (pl. 15, 151), and indeed differently on three duplicates from the same die. Usually there is consistency on the obverse though the reverse may differ. A change of lis initial mark comes with the third M in Cb(iii) (pl. 15, 153–4). This lis, and at first the R and M with it, last on into part of the final type.

Type D has a finer-meshed thistle. Its twenty-seven specimens are spread out over several varieties between which die-linking and muling are frequent. Of two successive obverse crowns that of Da is not unlike that of type C but heavier, with a two-line hoop, no pellets on the cusps and an even-sided arch (pl. 15, 156). The reverse crown remains the same as in C all through D. The reverse's cinquefoil, hitherto uniform, was soon replaced by a larger one – Da(ii) (pl. 15, 157). Also in Da the letters, now of two founts of different size, are often blurred. The slightly smaller, medium-sized, letters that form Da(iii) (pl. 15,

159) are similar in design to those of the gold of 1553 including the nicked-top A, and an M (fig. 5.6); on one reverse the older cinquefoil recurs (**pl. 15, 159**). Another obverse has no beaded inner circle. Thus there are features associated with bawbee classes VIIa-b, the transition to group 4.

Type D b and c, have a very poor obverse crown (fig. 4.4), its central broken-down lis and its arch now dented from C's punches. In style the letters of Db continue those of a(iii) but they are very small, and more often blurred than clear (**pl. 15, 160**). Six obverses have been noted, from three dies, but two have Da(ii) reverses and three Dc reverses, from two dies.

It is assumed that the three marked changes that constitute Dc were introduced simultaneously. Its cross-potent obverse initial mark is like that of group 4 bawbees. New larger letters include an N the right way round, but the medium-sized and defective D is from the punch used for the latest twenty-two shilling gold pieces and VIIa-b(i) bawbees (**pl. 15, 162**). One obverse is eccentric in having no inner circle, and the central M and R transposed (**pl. 15, 161**); it has a Da(ii) reverse. The other known obverse die is similarly represented by a single coin (Rich.161, **pl. 15, 163-4**). Its appearance is bold because of fairly clear letters on either side, including a large D, but its letter Os set obliquely or sideways, and the retention of a small T, again show poor workmanship. On the reverse the two cinquefoils have a wide incuse 'piercing' and are the same as the initial mark of class VIIIb(i). The saltire, however, remains fluted.

Discussion

Group and class proportions: the internal evidence

The various available hoards and collections give conflicting evidence about the size of the main groupings of bawbees – table 2. Contrary to the sharp tapering already noted in the Rigghead hoard, the nineteenth century collections listed by Burns and Richardson drew from hoards, unspecified and mainly well-worn, in which apparently groups 2 and 3 were best represented. Though the greater number of readily distinguishable varieties which characterise these groups is an evident incentive to collection, the preponderance of group 3 is borne out by the three c.1935–62 hoards. As group 4 is so small in these hoards and in Burns, its numismatic distinctiveness may have resulted in over-representation in Richardson and in subsequent collections. Probably it was much the smallest group.

TABLE 2

	<i>Coats</i>	<i>Rich.</i>	<i>Rigg. (incl. kept for NM)</i>	<i>Three hoards c.1935–62</i>	<i>Three private colls.</i>
<i>Edinburgh</i>					
Group 1	14	14	120 (38)	33	24
2	29	39	66 (43)	29	25
3	33	53	14 (11)	46	59
4	6	21	4 (4)	6	27
Halves	6	8	1 (1)	1	34
<i>Stirling (Gp. 1)</i>					
	5	5	12 (8)	1	16

TABLE 3

Group	Sample	Dupl. obvs.	%	Dupl. dies	+ Single specs.	= Obv. dies	Obv. die estimate
1 <i>Stir.</i>	55	46	86.8	11	7	18	21
1 <i>Edin.</i>	133	46	34.5	20	87	107	310
2	165	54	32.7	23	111	134	410
							740
3	186	58	31.2	25	128	153	490
4	57	14	24.5	7	43	50	210
							700
Halves, <i>Edin.</i>	72	18	25.0	7	54	61	245

N.B. Incomplete identification makes the Edinburgh estimates too large.²⁵

The obvious distinctiveness of the Stirling bawbees is, however, a likely reason for their relatively large number in collections, possibly in Rigghead as well. For their originally very small number of obverse dies can be closely estimated from their 85 per cent duplication – table 3. The present two-to-one ratio of reverses is based on possibly incomplete identification of reverse duplicates. One might expect it to be too high if, as seems probable, some of the obverse dies at first used at Stirling had been previously used at Edinburgh.

The die estimates given here for groups 2 and 3 are based less securely on identified 30 per cent obverse duplication, and thus indicate only maximum numbers. In these groups class III seems to have been relatively large, with II and Va each a little behind and IV only half of either, while Vc(i-iii) is comparable to Va. In the much subdivided class VI, VIb(i-iv) and VIc are similarly predominant, with VIIa like IV.

The greater monotony of group I obverse dies has led to a lower proportion of those from Rigghead being kept for the national collection. The Rigghead proportion of four to five for the coins of the pre- and post-Stirling phases compares with an overall one to one in other sources examined. The pre-Stirling obverses duplicate frequently (45 per cent noted recently) like Rigghead's late James V bawbees. Die recognition for the post-Stirling phase may be less complete. A distorting factor will have been also the discarding of poor Edinburgh specimens.

In the sample of half-bawbees Types A and D amount to under one-third of the total. Obverse duplication so far recognised is erratic, B and D (the scarcest types) having in all half of it. The resulting die-estimate will again be too large, which strongly suggests that the halves formed only a small part of the issue, as well as being unpopular with hoarders.

This very imperfect account of the internal evidence is put forward now in order to allow some comparisons with the historical evidence that is to be discussed in the next section. The recorded accounting periods of the mint are awkwardly incomplete at either end, and the typological groups cannot be fitted at all closely onto them. Yet some of the problems may be identified by supposing that Burns' great divide might coincide with the beginning of the third recorded accounting period. In the hypothetical part of table 4 the (possibly

²⁵ Using the formula $(n-1)(n-\text{known obv. dies}) = (\text{known single unduplicated obverses} \times n^2 - \text{size of sample})$, where n is the probable original number of obv. dies: see I. H.

Stewart, 'Second thoughts on medieval die-output', *NC* 4 (1964), 298-9 and 303.

much too large) die-estimates in table 3 for groups 1 and 2 have been reconciled with the pre-1547 striking figures by allowing just 3,100 coins per obverse die and assuming 50 dies for the blank in early 1543. The interestingly large variations in the average monthly outputs are, on the evidence, true and not hypothetical, and may conceal even greater variations within the periods. In the third and fourth periods, when output was high, the hypothetical numbers of dies become greater than those (already too high) of table 3, though there may be more missing months at the end than now proposed. This suggests that in times of heavy output either dies were used for a longer period or some fixed supply of dies (say monthly) had to strike more coins. The heavy output was, however, only relatively so, for in late fifteenth-century Flanders the 'normal' daily output from one *monneyeur* (= obverse die ?) was 3,168 *courtes* (two *mites*, much baser than Mary's pennies).²⁶ (For an improbably high Scottish output see p. 140).

Historical Records

Though official records of minting do not survive, notes from them in the seventeenth-century Hopetoun MS specify the bulk-weight, value and profits of bawbees during four accounting periods.²⁷ Theoretical numbers of bawbees struck may be calculated from these, at 16 per oz., 16 oz. per lb., and 16 lb. per stone (4,096) – disregarding the probability that an unknown proportion of half-bawbees was subsumed – as shown in table 4.

TABLE 4

<i>Dates and metal minted, from Hopetoun MS, presumably incl. half bawbees</i>	<i>Estim. no. of coins if all bawbees</i>	<i>No. of months</i>	<i>Hypothetical Av. no. of coins p.m.</i>	<i>No. of obv. dies for period @ 3,100 each</i>
<i>Period</i>				
[14.12.42–10.8.43]		(8)	19,375?	50 ?
1 10.8.43–30.6.44 54 st. 6 lb.	222,720	(9½)	23,444	71
2 30.6.44–30.3.47 463 st. 1 lb.	1,896,704	(St.5)	12,400	20
[incl. Stirling? 6.44–11.44]		(28)	65,525	592
				733
3 30.3.47–7.3.49/50 121 st. 4 lb. 2 oz.	496,672	(35)	14,190	160
[pennies @ 42 per oz. alloy, from 12 st. silver ²⁸ :-				
[3.5.47 – ? 144 st. 4 lb. 8 oz.	1,551,312]	[(35?)	44,323	?]
4 7.3.49/50–15.9. 499 st. 6 lb. 2 oz.	2,045,472	(41?)	49,889	659
[53 ? or part 54?]		(50?)		
				819
				4,661,568

In addition to what the table lists, it was stated in the Hopetoun MS that 'thair wer mony ma bawbees cunyeit yet thair remains na ma in the register'. There were presumably more at the end (see below), and probably at the beginning in the eight months of Mary's reign before 10 August. The Stirling bawbees of 1544 may well have been included in the

²⁶ P. Spufford, 'Mint organisation in the Burgundian Netherlands in the fifteenth century' in *Studies in Numismatic Method* edited by C. N. L. Brooke et al. (Cambridge, 1983), pp. 239–61 (pp. 243–4 and note 28).

²⁷ Hopetoun MS as in note 16. Burns II, 263–4, 266, 292–5; C-P I, 80–2, 96.

²⁸ Burns II, 307–9; excluding proposed halfpence not now known.

above figures as if there had been no transfer of minting. As J. K. R. Murray has shown,²⁹ their large cross-potent and plain crosses in the angles, the 'arms of Jerusalem', derive from the arms of Lorraine, and so were the symbol of Mary of Lorraine and Guise, the queen-mother, repeated on her silver coinage of 1554. After the earl of Hertford's surprise landing at the beginning of May had left Holyrood and much of Edinburgh burnt, during Henry VIII's 'rough wooing', she set up her court at Stirling. She was appointed Governor (Regent) by her convention there on 3 June,³⁰ in opposition to the earl of Arran, whose badge was the cinquefoil placed on all other bawbees of the reign. The mint apparatus might have been sent away from Edinburgh in May, but it is unlikely that any Stirling bawbees were struck before June. They were referred to in letters sent by Governor Arran to the burghs of Stirling and Perth between 13 and 18 July 'dischargeing the babeis cunyeit be the quene', and again before 3 October when officers were paid 'wha proclamit letters in Aberdene and Banfe dischargeing the quene of hir autorite and dischargeing her canze'.³¹ This may imply that the bawbees continued to be struck into the autumn. They will have ceased, but become legal tender, after Mary of Guise was reconciled with Arran late in November.

A year later, on 1 November 1545, Alexander Orrok was succeeded as mint master by William Hamilton of Comiskeith,³² but as James Achesoun continued as master coiner this may have been a sinecure.³³ The subsequent third accounting period in the Hopetoun MS is there specifically associated with Sir William Hamilton of Sanquhar as 'taxman [lessee] of the cunyeihous'. The long Letter of Tak to Hamilton and 'his partakeris' dated 1 March 1546/47 is recorded in the Register of the Privy Seal.³⁴ Its provisions included the leasing of the profits of the coinage for a fixed yearly sum, and blanket authority for minting a specified comprehensive range of gold, silver and billon coins, which significantly did not include quarter-bawbees. A new 'sinker of the irons' John Achesoun, perhaps James's son, was appointed on 4 April 1548 in place of Patrick Lindsay deceased.³⁵ A curious entry in the Acts of the Lords of Council for 5 December 1549 instructs that all puncheons for sinking of the irons for the coining of gold, silver and 'other layit money' which had been delivered to the late Patrick Lindsay, and the late Robert Logan of Cotfield as cautioner, should be delivered to James Achesoun, goldsmith and master coiner.³⁶

For the fourth period in the Hopetoun MS William Colville, commendator of Culross abbey, is shown as 'comptroller and taxman'. It seems that there is no blank in the MS after '15 September' for the year but, unlike Cochran-Patrick,³⁷ one would assume that the year intended must be later than 1550 to allow for the largest stated minting of the four. And indeed the Lord High Treasurer's accounts recording the royal profits from the coinage from 1546 onwards,³⁸ show that the commendator paid various sums in respect of 1550, then £2,333.6.8 for 1 November 1551 to 30 November 1552, and the same sum for 1 March 1552/3 to 1 March 1553/4 – which must cover the 1553 gold and silver, the first fine coinage since 1543.³⁹

Bawbees were only 25 per cent silver and the Hopetoun MS comments 'The maist pairt of the saidis babeis were cunyeit of clippit souses quhilk than wer proclamit in France for bullion and send heir to be convertit in babeis for payment of thair men of weir lying heir agains England'. This can be related to the French forces which arrived in June 1548, and to the Act of the Privy Council in December 1551 which prohibited merchants from

²⁹ 'The Stirling bawbees of Mary, Queen of Scots', *NCirc* 1966, 306 and 1968, 265.

³⁰ LHT VIII, p. lxi.

³¹ LHT VIII, 308-9, 322.

³² *Register of the Privy Seal of Scotland*, III (1542-48) edited by D. H. Fleming (Edinburgh, 1936), No. 1400.

³³ Murray 'A tender for the Scottish coinage . . .', p. 223.

³⁴ As note 32, No. 2181.

³⁵ *ibid.* IV (1548-56), No. 2704.

³⁶ *ALC in Public Affairs*, p. 595.

³⁷ C-P, I, p. cxxv.

³⁸ C-P, I, 80-82; LHT VIII and X.

³⁹ Murray, 'The Scottish Coinage of 1553', pp. 98ff.

importing for public circulation 'clippit sowsis and clippit Carolus as cryit doune in the realme of France'. Even if exaggerated it does help to explain the large mintage in the fourth accounting period, when there were also Acts in July and November 1551 about the unpopular circulation of French money, which may then have been replaced by recoin-ing.⁴⁰

1554 still presents problems. The Hopetoun MS states that 'in the end [of the bawbees] thair wer sum cunyeit to Mr David Panter bischop of Ross'. They were, however, not the only ones then coined. For as shown in the Acts of the Privy Council,⁴¹ they were authorised on 11 January 1553/4 to be made from 'certane stanis of silver veschell that the bishop has for his expensis'; but on 22 January the council further 'ordanis James Aitchesoun maister Cunyeour to imprent *all silver* [my italics] to be brocht and deliverit to him be ane venerable fader in God William commendatour of the abbey of Culros comptroller to our soverane lady in babeis, Providing alwais that the silver inbrocht or to be inbrocht be my lord of Ross . . . be just cunyeit in babeis conforme to the ordnance maid their upon befoie, and gif the bischop of Ross has nocht the said silver reddy to be cunyeit as said is, ordanis the said James to receive the silver to be inbrocht be the said venerable fader and to cunye the same in babeis as said is, nochtwithstanding the actis made theirupon to the contrair' (not now extant). Presumably it was the bullion value plus the profits of his issue that were wanted to support the bishop's embassy to France, and foreign currency and credit could have been borrowed on their security. So the minting need not have been hurried, and Achesoun was authorised to start on the commendator's silver if the bishop's was not ready when the bishop left.

Supposing 'certane stanis' amounted to at least three (48 lb. of say 87 per cent silver) this would nominally have given 42,762 bawbees with a face value of £1,069.1.0 including a profit of £261 if one disregards the value of the vessels' 13 per cent alloy.⁴² But in addition, specifically lifting some previous embargo and without limit of amount, authority had been given to the commendator, accountable as lessee of the mint, to strike billon again on his own, probably in line with his previous scale. There was nothing exceptional in the specification of vessels to be used as bullion, for details of silver and gold vessels received and paid for by Achesoun in 1543–47 are noted in the royal accounts, and silver vessels totalling 3 st., 2 lb., 3 gr. are noted for 1550.⁴³ In a way comparable to the bishop of Ross' licence there was a licence to the French ambassador to have struck two stone weight of utter fine silver into pennies between 6 December 1554 and 'the x of Januar next thaireafter'. Made up with alloy to 24 st., 12 oz. as recorded in the Hopetoun MS this would have made 258,552 coins in barely over a month; but much higher rates and evidence of activity were soon usual.⁴⁴

Conclusion

From the samples catalogued by Burns and Richardson it is likely that the size of group 1 (understated before Rigghead) together with group 2 may have been not much smaller than group 3 and 4 combined (in which 3 must have greatly predominated despite the natural tendency of collectors to over-emphasise the scarcer varieties such as those in 4). The substantial part of group 1 now shown to have been later than the Stirling bawbees of mid-1544, must be included in the second accounting period of the Hopetoun MS. We

⁴⁰ *Register of the Privy Council of Scotland*, edited by J. H. Burton (Edinburgh, 1877). I (1545–69). 102–10. C-P I. 71–74.

⁴¹ RPC I. 151–2; C-P I. 75–76.

⁴² Cf. Burns II. 294. For analyses of sixteenth century

vessels see H. McKerrell, *PSAS* 104 (1971–72). 309–15.

⁴³ LHT VIII 219–21. C-P 80; 1546–47 IX 20; 1550 IX.20. C-P 81.

⁴⁴ Hopetoun MS. C-P I. 98–9 and Burns II. 308–10.

might then tentatively equate group 2 with the remainder of that period. The striking of penny pieces authorised in May 1547 may have had priority in the third period (1547–50). So if the main minting of bawbees in that time was conveniently marked by the beginning of group 3, it need not have begun promptly after John Achesoun's arrival in 1548. Period 4 with its largest stated minting, beginning in 1550, would then cover the bulk of group 3 and at least some of group 4.

The criterion for group 3 has been taken to be the change in the inscription from D·G·REGINA to D·G·R rather than the not quite coincident strong fluting of the saltire headlined by Burns, for it seems likely to have been the more evident and significant. The contraction to D·G·R had already been used on the rare twenty-shilling gold pieces of 1542 and on James V's half-bawbees, and was standard, if only for reasons of space, on the tiny penny pieces apparently first authorised in 1547. Perhaps group 3 bawbees merely followed this lead; and it is R· too on the gold of 1553 except for one forty-four-shilling type which has REGINA. It is notable that this full form returned in 1555 not only on the large silver testoons but also on the billon coins that were considerably smaller than the bawbees. Moreover contrary to Scottish precedent it was in each case made emphatic by being placed at the end of the phrase, after instead of before SCOTOR; and this arrangement was continued whenever Mary issued coins alone, though with Francis and Henry Darnley the usage was R·R· SCOTOR or similar. In 1553 and 1555 the stress on the queen may have been subtle claims by the rival regents to be acting for her. Perhaps it is not too far-fetched to wonder if D·G·R· had marked Mary's departure in November 1548. The change in class VIII and in 1553 late gold to DEI in full could reflect the increasing religious strife by stressing the divine legitimacy of the queen's authority. (The political significance of the motto-like inscriptions on the coinage of Mary and of James VI has been examined by J. H. Stewart.)⁴⁵ Similarly the replacement of the fleur-de-lis initial mark on the class VIII reverse by a cinquefoil, as on the obverse of the 1553 testoons, may have been intended to soft-pedal the French connection.⁴⁶ Mary of Guise's cross-potent, however, introduced as the initial mark of VIIb, continued to indicate her strengthening interests, as shown by its presence on the coins during her subsequent regency (1554–60).⁴⁷

At any rate while typologically class VIIb is linked with the 1553 coinage there is as yet no proof that it must all precede that year, nor any that it was not continued after it – even for a while concurrent with class VIII if that was all for the bishop. On the other hand only a lesser part of VIII may have been the bishop's, for on the basis of our very small sample VIIb and VIII might have had a ratio of 3:2. We can only be confident that, as all known bawbees (except those of Stirling) bear the Hamilton cinquefoils, none were struck after Arran resigned as Governor (Regent) in November 1554. There is, too, no gold or silver dated that year for the mint to have worked on, though already in September there were preparations for a new coinage.⁴⁸ Pennies which Burns identified as those struck for the French ambassador at the turn of the year have a crown like class VIII, fleurs-de-lis instead of cinquefoils, and a plain cross not a cross-potent.

Sixpenny billon was not struck again. There were lighter twelve-penny groats (nonsunts) of six not three deniers fine in 1558 and 1559, following more very base pennies, penny-halfpenny 'lions' (hardheads) and fourpenny placks, and some experimental silver. Substantial minting of good silver had, however, been resumed in 1556–58. The date when

⁴⁵ 'Parallels between German and Scottish coins of the 16th century', *NCirc* (1981), 161, cf. J. E. L. Murray, *NC* 19 (1979), 156; 'Coinage and propaganda: an interpretation of the coin types of James VI', in *From the Stone Age to the Forty Five*, pp. 450–62.

⁴⁶ A penny similar to B.5–6 (rev. only fig. 865, obv. is B.4)

but with a cinquefoil as obv. 1, m. hitherto unknown in this denomination, has been recently added to the Stewart collection.

⁴⁷ Murray, *NC* 19, (1979), 159.

⁴⁸ *LHT* X, 237, 262, C·P I, 82.

the Rigghead hoard was hidden, probably 1554–55, is deduced from the absence of all these. Counterfeiting indeed went on and was one of the reasons given in 1567 for a halving of the values of billon, including the reduction of the bawbee to threepence and the nonsunt to sixpence.⁴⁹ Yet there was no mention of either in 1575 when counterfeiting of the lions and placks was so serious that they were called in, and those genuine re-issued countermarked, at the reduced 1567 values.⁵⁰ Whatever their price bawbees stayed numerically the predominant coin in hoards for at least twenty years after their issue ceased.⁵¹

APPENDIX

Inventory-type summaries

Rigghead Sandpit, Collin, Torthorwald, Dumfriesshire, December 1963.

10 AV, 142 AR, 377 Billon incl. 1968 stray parcel, plus some unrecorded, English, Scottish and French. Deposit: c.1554–55.

England (115): Henry VII, half-groats, profile 4; Henry VIII, 2nd issue groats, 93, half-groats 18.

Scotland (405): James III, plack 1st issue 1; James IV, placks OE 8, Rom. 3; James V, groats 21, one-third groats 6, placks 12, bawbees 132, half-bawbees 6; Mary, abbey crown 1, bawbees Edinburgh 202, Stirling 12, half-bawbee 1.

France (9): Charles VIII, écu 1, half-écu 1; Francis I, écus 7.

Container: earthenware jug.

Disposition: NMAS 200, Dumfries M. 93, Hunterian 54, BM 7 English, RSM 1 French, returned to finders 174.

Noranside, Tannadice, Angus, October 1962

1 AR, 93 Billon, Scottish. Deposit: c.1587.

Scotland (94): James IV placks OE 5, Rom. 2; James V, placks 5, bawbees 5, half-bawbee 1; Mary, bawbees Edinburgh 24, half-bawbee 1, bawbees Stirling 1, placks 17, hardheads 1555 3, 1556 1, 1558 5, uncertain 6, penny 1556 1; Mary and Francis, hardheads 13, James VI, half-merk 1580 1, placks 3.

Disposition: NMAS 21, Dundee M. 19, returned 54.

CATALOGUE

Notes. This catalogue of varieties aims at listing features of the bawbees and half-bawbees in the Rigghead hoard along with those in Burns, *Coinage of Scotland* (primarily the Coats collection, B. no.: new varieties sometimes stressed as B.–). With these is a selection from the other collections of the National Museums of Scotland (NMS) – published by Richardson (Rich.) or then unpublished (Rich.bis), later accessions from the Braeside and Noranside hoards etc (year nos.), also the small Royal Scottish Museum collection (RSM). The bawbees in the Ashmolean and Hunterian *Sylloge* (AS and HS) are also shown, many in the latter from Rigghead. Some coins in Dr I.H. Stewart's collection are included (St. coll.) and a few in the British Museum (BM) and elsewhere. Die identities are indicated by = (see p. 37), double-struck by d.s. and initial-mark by i.m.

⁴⁹ *Acts of Parliament of Scotland* (Edinburgh, 1814), III, 43 (26 December), C-P I, 108 (heading 'raised' instead of reduced). In 1546/47 counterfeit English irons (dies), and coins of 'tyñ', English and bawbees, owned by Walter Gardner, executed, had been produced by the Provost of Edinburgh for destruction (*Acts of the Lords of the Council* . . . p. 561). In November 1556 Henry Wynd burgess of Dysart was beheaded for striking and issuing 'forged money called Balbeis' (*Criminal Trials*, edited by R. Pitcairn

(Edinburgh, 1833) I, 392). A trial in 1568 for alleged coining of false bawbees is referred to in *Register of the Privy Council of Scotland*, I, 642.

⁵⁰ *Acts* III, 92 (5 March 1574/5), C-P I, 109 (in error '1571', so also Burns II, 329 but not 314) but Fynes Moryson, *An Itinerary* (London, 1617), p. 283, seems to imply that the original values had persisted (quoted by Burns II, 262).

⁵¹ E.g. Braeside nearly half, 1573–; Noranside a third, c.1587; see note 3 and Appendix.

In the left margin Rigghead serial numbers are itemised, showing what was not acquired for the National Museum: R returned to finders (thence to collectors), D acquired by Dumfries Museum and H by the Hunterian Museum.

Pls. 12–15 are numbered 1–164, and A–G (gold, see note 8), same obv. and rev. —, die-linked. Figs. 1–5 are crowns and specific letters.

James V (1513–42)

Bawbees (1539–42)

Rigghead nos

Ja. *Obv.* crown without pellets, no annulet in field, cross i.m. of various forms, *rev.* 3-pellet stop, saltire grained (throughout), B.5 fig. 776.

a (i) *Obv.* crown underside pointed oval, sometimes hatched

167–74 cf. B.5 = Rich. 76, *rev.* N serifs complete: 168 *obv.* pl. 12, 1, *rev.* = AS 957; 171 HS 953; cf.
D.H.R3 HS 956 and Rich. 79 (pl. 12, 2).
175 R St coll. *obv.* ducat R (fig. 2.1), tall D (= pl. 12, 3), *rev.* same R, normal D (pl. 12, 4), *obv.*
= AS 969 (*rev.* normal R).

a (ii) *Obv.* crown underside reduced to short hooks at sides

176–88a *rev.* N complete: 179 HS 954; cf. AS 958.
D2.H.R9
189–91 *rev.* N lower front serif broken sharp: 189 *obv.* wide thin cross i.m. (pl. 12, 5), *rev.* error
D.H. OPPD; 191 HS 955.

Jb. *Obv.* as (a), *rev.* single pellet stop, B.3 fig. 774

(a)/(b) Noranside 1963.606 *obv.* = B.5

(a)/(b) 1964.995 *obv.* pl. 12, 3 = Rigg. 175, *rev.* normal R, lis without central bar, N complete; cf. St coll. *rev.*
ducat R (pl. 12, 7–8)

195 similar to 1964.995, d.s. but also error SOCTORV (p. 00)
192–3 normal lettering, N complete: 193 HS 970 (*recte* no annulet)
H
194 *rev.* N breaking ?, corrected error ID over DV, complete lis (pl. 12, 6).

Jc. *Obv.* crown as (a) but pellets added to cusps; annulet in left of field begins, thin wide cross i.m. becomes normal; *rev.* single pellet stop

196 (c)/(a) *obv.* hatching but no hooks, no annulet, *rev.* 3-pellet stop but sharp N (pl. 12, 10);
cf. B.4 fig. 775 and RSM 1933.451 (pl. 12, 9), *rev.* N complete
197 no annulet, complete N; cf. AS 973 annulet ?
198–9 B.– annulet at left edge of field, *obvs.* (pl. 12, 10) = Noranside 1963.607 and St coll. ex
Murray, *rev.* 198 complete N, 199 sharp N (pl. 12, 12).
200–1 *obvs.* (pl. 12, 13) = B.2 fig. 773, arch omitted, annulet to left of crown, pellet in O, *rev.*
H complete N; 201 HS 972
205 *obv.* left hook gone, pellets omitted, annulet mid-height over I, *rev.* complete N (pl. 12,
14–15).

Jd. *Obv.* crown with hooks removed, normally with pellets, annulet usual, rarely large; *rev.* single pellet, B.1 fig. 772

d(i) N complete or sharp

202–3 *obvs.* = Rich. 77 (pl. 12, 16), annulet high, but not struck up on 202, pellet in O, *revs.*
complete N, all different, Rich. 77 M bifid feet (pl. 12, 17)
204 B.– annulet to right, high above 5, guide-lines at edge of crown (pl. 12, 19–20), *obv.* = St
coll. [Rich. 76 *recte* no annulet, see a(i)]
211 B.– annulet above both I and 5 (pl. 12, 18), *rev.* N breaking
206–7 crown pellets omitted, annulet above I, *rev.* N complete and sharp, 206 HS 962
H

212 *obv.* ducat R, annulet large low above I (**pl. 12, 21**)
 213–22 annulet varying height above I: 213 *obv.* = 214 HS 971 and 225; 215 = HS 960 (not Rigg.)
 222a–b
 D4.H.R2
 – Noranside 1963.608 *rev.* double or pseudo-trefoil stop

d(ii) some with N breaking further, most with N truncated

223–7 annulet varying height above I. 223 larger flan, 31.7 gr (**pl. 12, 25**); 225 *obv.* = 213–4; 227
 D.H HS 967 = AS *obv.* 959
 228 similar. *obv.* (**pl. 12, 22**), *rev.* N breaking further, 3 dots in field below R = 229
 229–36 annulet omitted: 229 (**pl. 12, 23–4**) *obv.* = 230 and St coll., *rev.* = 228; 231 *obv.* HS 951 =
 D.H2.R 232 = Rich. 78 fig. 106, B.p.267–8 '4a'; 235 HS 952
 208–10 *obv.* crown pellets omitted, annulet high, three same die becoming rusty, 210 HS 963
 H
 237–48 annulet low: 244 HS 965, cf. HS 961; two with large annulet, 247 (35.2 gr) *obv.* = B.1bis
 D4.H.R3 fig. 772 (28 gr)
 249–56 annulet high: five same *obv.* 249–50 and 252 HS 966, and two another; 254 *rev.* BVRG
 D2.H.R2
 257–85 annulet mid-height; incl. five each from two *obv.* dies, four from another, fifteen singles
 285a,b (?) *obv.* 262 = Rich. 75 (**pl. 12, 26–7**) shows composite crown (p. 00); *obv.* 266 = B.1:
 D6.H.R18 *obv.* 271 = 272 rusty and cracked = St coll. worse (not Rigg); c.275 HS 964
 – St coll. *obv.* annulet mid-height faint, the composite G's vertical stroke set horizontally on
 the Cs (**pl. 12, 28**)
 – 1914 Ayr, annulet above I, also to right and below (**pl. 12, 29**)

Je. as d(ii) truncated N, but ducat R (fig. 2.1) *obv.* and *rev.*

286–93 annulet varying height above I: 286 *obv.* large flaw in field; 291 annulet triple-punched (**pl.**
 D2.H.R **12, 30**) = Lockett coll., *rev.* lis without bar = 293 St coll.; 292 HS 968 large annulet
 double-punched

Half-bawbees (1539–42)

JA. *Obv.* cross i.m. narrow, crown interior usually indicated, annulet above I common [9 *obv.* dies]

– St coll. *obv.* crown full interior ? (d.s), no arch, annulet high? (**pl. 15, 128**), *rev.* = 294
 294 crown side-hooks, annulet above I, and above 5 ?, *obv.* (**pl. 15, 127**) = NM 1914 Ayr
 – BM Grueber 9, side-hooks, annulet above I triple-punched, *Scot. Coinage* pl. x.144, *obv.*
 and *rev.* = AS 974
 – BM 1914.12.6.24 (Ayr) *obv.* side hooks, no annulet, exceptionally ends ORV (**pl. 15, 131**)
 = Lockett coll.
 – B.2 fig. 778 left hook, no annulet, cf. Rich.81
 – RSM 1926.83 etc. *obv.* left hook ?, annulet above I, ends VVM in monogram (**pl. 15, 129**),
rev. grained saltire (**pl. 15, 130**)
 – Rich.80 no hooks, annulet above I, A engraved on reversed V ?, *obv.* = St coll.

JB. *Obv.* cross i.m. wide, crown no interior, annulet in field [6 *obv.* dies]

295–6 *obv.* dupls., large annulet above 5 = Rich.82 (**pl. 15, 134**, B.2a fig. 779) etc. 296 HS 975
rev. = 295
 297 large annulet above I
 298–9 *obv.* and *rev.* = B.1 fig. 777 (298, **pl. 15, 132**) normal annulet; cf. NM ex Murray (1987 181.
 D ill.), ex Lockett (**pl. 15, 133**)

Quarter-bawbee

IQ. *Obv.* three thistle-heads radially, i.m. crown, *rev.* like half-bawbee

– B.-1957.356 ex Lockett, 'D G R', ends ORV, 8.2gr. (**pl. 15, 135–6** enlargement 135a–6a, and
Scot. Coinage pl. xxii.300)

MARY (1543-67)

*Bawbees, Edinburgh (1543-54)**Group 1, Class 1*

1a. *obv.* crown (fig. 1.1) and thistle, *rev.* lis and grained saltire, all as James V bawbees

(i) *rev.* cinquefoils with pellet centre; R (fig. 2.1) and peak-topped open A as James Je

306-19 cf. *rev.* B.3 fig. 824.⁵² *obv.* ends VM as James, in Rigghead at least one pair (= B.1, a(ii))
D2,11,R9 and two triple die dupl.; 310 HS 1025 *obv.* = HS 1021 a(ii)

301-5 *obv.* ends V, contraction pellet as normal; 301 *rev.* = Rich.46 (pl. 12, 32); 302 *obv.* pl. 12,
D,H 31; 305 HS 1024

B.2 MA·R = *obv.* B.3 (not noted), V

(ii) *rev.* cinquefoils without pellets, henceforward

320-26 cf. B.1 fig. 823 *obv.* VM; 321 d.s. SOT but = 310 and 323 HS 1021

D,H,R3

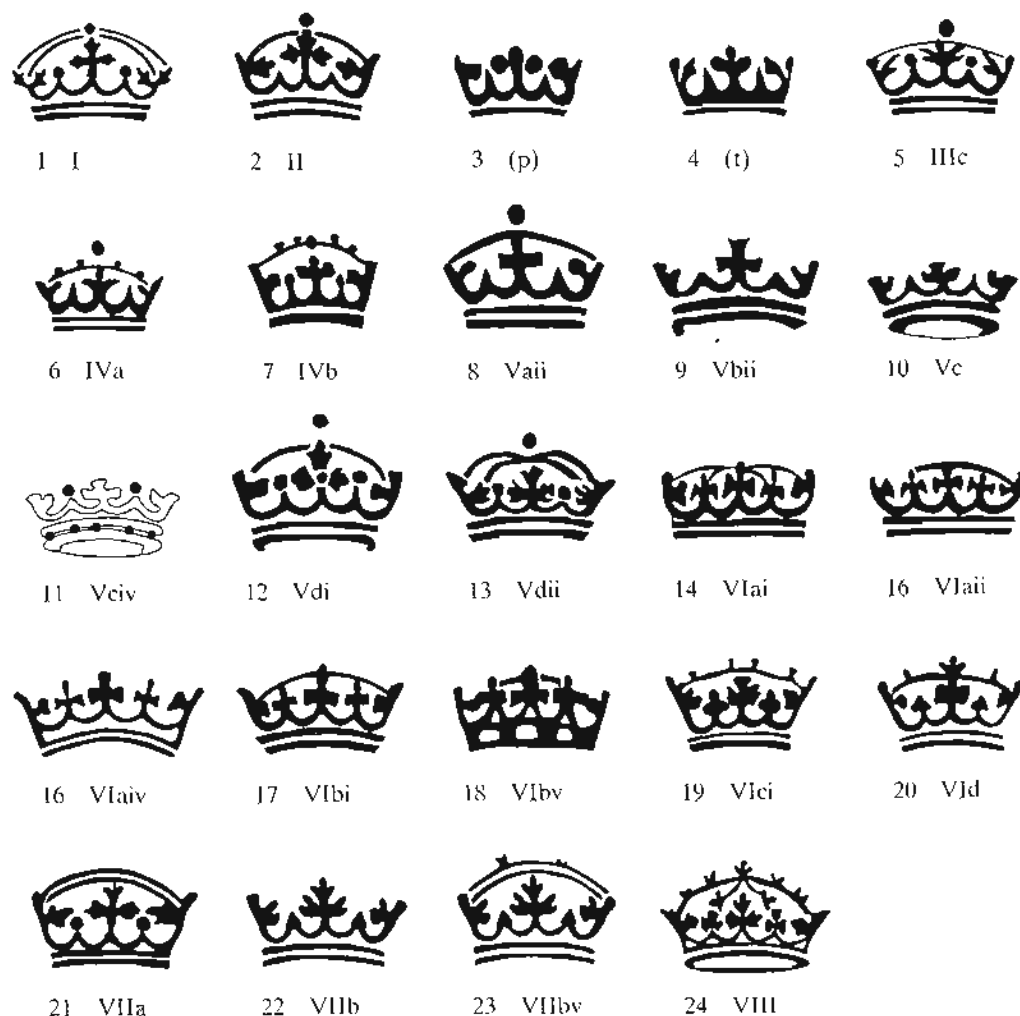


FIG. 1 Crowns of Mary bawbees.

⁵² Bawbee B. fig. 824 *obv.* is class Ib(ii) and is not in the Coats collection. Rigg,300 was an abbey crown of Mary (=B.2), stolen from Dumfries Museum in the 1960s with part of the French gold



FIG. 2 Distinctive letters in Groups 1 and 2.

327–29 *obv.* \dot{V} : 327 = *obv.* Rich.46. a (i); 329 HS 1022
 D.H
 330–1 endings unascertainable
 R2

(iii) *obv.* small lob-topped closed A, some larger letters also

– see 337 a(iii)/b(i) **pl. 12, 33**

Ib. *Rev.* very small lis i.m., *obv.* new thistle dicing, \dot{V} normal, R with straight foreleg and circular fork (fig. 2.2)
 (i) new open A, left side of flat top soon breaks

332–4 a(i–ii)/b(i) *obv.* VM, 332 *obv.* error C under S; 333 HS 1023
 H.R
 335–6 a(i–ii)/b(i) 335 *obv.* = B.4 (not *obv.* fig. 825) really \dot{V} , *rev.* **pl. 12, 35**, cf. B.4 fig. 825; 336
 H HS 1026
 337 a(iii)/b(i) *obv.* (**pl. 12, 33**) A, \dot{V} , cf. 1955.641 Braeside, V
 338 *obv.* (**pl. 12, 34**) error MARA, round o, *rev.* normal narrowed O, cf. B.6 *recte* fig. 825 *obv.*, no
 error = Rich.48
 339–339a *obv.* narrowed O, *rev.* round o
 D
 340–50 narrowed O both sides, cf. B.4bis and B.5 (REG); 344 HS 1027; errors: 350 no cinquefoils
 D.H.R6 (**pl. 12, 36**) cf. Lockett coll.: 1955.640 Braeside *rev.* N under I; 1987 *ex* Murray *obv.* no
 pellets on crown

(ii) lob-topped closed A, R and M as b(i), narrowed O

408–10 St coll. (see Ib(iii)) cf. Rich.49 (**pl. 12, 37**) and Rich.50
 R3

Is. Stirling bawbees (summer–autumn 1544)

Obv. like Edinburgh class Ib, *rev.* cross-potent and crosslets, crown i.m.

s(i) small M and R, open A complete, round O, all as Ib(i)

– B.74 fig. 860 *obv.* V, *rev.* = St coll. (*obv.* = RSM 1926.85 \dot{V}), cf. BM 1914, 12–6, 56 (Ayr)
 [3 *obv.* dies]

s(ii) open top broken as late Ib(i) [3 *obv.* dies]

503 *obv.* V, cf. B.75 etc really \dot{V} , and Rich.152 \dot{V} (**pl. 13, 38–9**)

s(iii) closed A, cf. Ib(ii), but round O [4 *obv.* dies]

504–5 504 *obv.* V (**pl. 13, 40**), *obv.* and *rev.* = Murray sale 1987; 505 *obv.* and *rev.* = Rich.153
 D V, *obv.* = 506–7

s(iv) larger M and R as Ib(iii), still round O (breaking) [1 *obv.* die]

506–7H s(iii)/s(iv) 506 = 507 HS 1055, *rev.* **pl. 13, 42**, *obv.* = 505

508–9D s(iv)/s(i–iii) *obv.* 508–9 *rev.* close **pl. 13, 41** = B.76 etc

– s(iv)/s(iv) St coll., *obv.* = 508, *rev.* = 506–7

s(v) narrowed O [7 obv. dies]

- 510 s(iii)/s(v) obv. V = Rich.154, rev. pl. 13, 44: AS 1054
 511 s(v)/s(i-iii) 511 = obv. 512-3 etc, RV close
 512-3H s(v)/s(v) 512 = obvs. 511, 513 HS 1058, BM 1914, 12-6, 57 (Ayr); rev. = Rich.154 etc)
 514 obv. = B.78 fig. 861 (*recte*) etc, RV in monogram; B.78 = Rich.156 and revs. 154 and 155 (obv. pl. 13, 43); cf. HS 1057 V = obv. AS 1056 and rev. B.77 (not ill.); cf. *Scot. Coinage* pl. xi.156 (BM E2495)

Edinburgh

Class Ib(iii) (autumn 1544-)

Obv. as B.12 fig. 828, M,R and O as late Stirling, rev. lis i.m. as Ib(i-ii); other large letters incl. lob-topped A which breaks, followed by lis; late R fig. 2.4

- 351 b(iii)/b(i-ii) obv. crescent below M in field, cf. B.10 fig. 826 = B.10bis = obv. Rich.52 (revs. b(iii))
 352-406a obv. V regular, but unascertainable in c.40 per cent, rev. lis often without foot as 364 (pl. 13, 46); 352 obv. = B.9 pseudo-crescent stops; 371 HS 1029; cf. AS 1028 and B.7-8 and 12, also B.fig. 824 obv. (not in Coats); *Scot. Coinage* pl. xi.154 (BM)
 D6,H,R 19 (N.B. Coins returned as b(iii) included some b(ii) - 407-9 and presumably others)
 - 1987 ex Murray obv. MA-R
 - St coll. rev. pellet on inner side of upper arm of saltire
 - St coll. rev. crown upside down
 410 rev. lis fragmentary
 411 B.- obv. SCOTOR. (pl. 13, 45) = Rich.69, rev. complete i.m.

Ic. Obv. as B.11 fig. 827, new R (fig. 2.5); rev. larger lis i.m., cinquefoils slightly larger

(i) rev. R as fig. 2.4; new N complete or chipped

- 416H c(i)/b(iii) HS 1030
 412-5D 412 obv. V (pl. 13, 47) = Rich.53 (rev. pl. 13, 48)

(ii) rev. R as obv., added tip more horizontal

- 417-8 417 obv. wide N ?, cf. II/Ic(ii); 418 obv. crown arch incomplete

Group 2, Class II

Obv. crown fleury (fig. 1.2; B. fig. 829-32), no pellets on cusps, single-line arch (unless no room), new thistle, soon changed; rev. two main forms of crown (p) and (t), (fig. 1.3-4), two sizes of lis i.m., fatter cinquefoils; several letters vary, notably M

IIa(i) obv. large dicing on thistle, upper indentation of M almost a right-angle (fig. 2.6), rev. as B. fig. 829 (B.15 not 13), 'pellet-and-club' crown (p)

- 419 IIa(i)/Ic(ii) obv. no stops cf. Rich.62, V as usual no contraction mark, obv. = 1987 ex Murray (rev. Ic(ii) wide N)
 420-1 420 obv. pl. 13, 49, rev. saltire part striated, large lis; 421 saltire part rippled and fluted, large lis
 431 obv. = 1955.642 Braeside (with rev. smaller lis, pl. 13, 50), rev. smaller lis, ends GI
 - B.15 and Rich.78 V, B.15 rev. fig. 829 large lis, GI, dot in field below lis
 - St coll. obv. OR, rev. wide-angle M, large lis with hair line and top GI, crown ?

IIa(ii) obv. smaller dicing, M may have sharp serifs

- 432H HS 1034 rev. large lis, GI; cf. Rich.65 rev. large lis, OP GI (pl. 13, 52); B.17 obv. fig. 831 D G, not noted in Burns, rev. smaller lis, cf. B.16 fig. 830
 - Rich. 59 obv. MA-R
 - Rich.71 obv. ends OR (pl. 13, 51), rev. smaller lis

IIb. obv. crown exceptional (was in Burns class IV), like rev. (p) or (t - central trefoil) but plain arch added; dicing and M as a(ii)

- B.27 *obv.* fig. 836 crown (p); D:G V = B.27bis, *rev.* also crown (p), saltire rippled and fluted
 422 *obv.* (p) (pl. 13, 53), orb pellet below beaded circle, *rev.* crown uncertain, serifed M
 423-4 die duplicates = Rich.60, *obv.* and *rev.* crown (p), grained saltire, smaller lis
 - B.28 *obv.* crown (t), M as a(i), D:G (pl. 13, 54), *rev.* (p), saltire grained and fluted, large lis,
 'OP GI'

IIc. *obv.* crown and thistle as a(ii) – arch rarely visible, 'acute' M (fig. 2.7), *rev.* central trefoil crown (t), large lis normal

- c/a(ii) Rich.68 D:G, *rev.* saltire striated and strongly fluted, GI: cf. AS 1032 (*obv.* = AS 1031 & B.14 c/c)
 - a(i)/c 1972 Aberlady *obv.* V, *rev.* smaller lis, GI'
 430 a(ii)/c *rev.* saltire rippled and part fluted, GI'
 - c/c B.13 *obv.* fig. 829 D:G = AS 1033 (*rev.* GI); B.18 fig. 832 *obv.* no arch
 425 D:G, *rev.* crown (p), five or six irregular dots in field below i.m.
 426-9 D:G, 427 *obv.* and *rev.* central compass-mark (pl. 13, 55-6), *rev.* lis double-punched
 D.H (placing pellet-foot inside beaded circle), saltire rippled and part fluted = two in St coll. 429 HS 1035
 435 *obv.* no arch, ends OR, *rev.* GI, hair-line lis as on into Va, saltire part fluted (pl. 13, 57)
 433-4 fragments

Group 2 ctd, class III

Obv. crown cross-fourchée (fig. 1.5), letters like IIc, *rev.* crown normally (t)

IIIa. *obv.* no pellets on crown cusps, plain arch, *rev.* large lis as IIc, endings V GI normal, V GI & V GI scarcer

- 437-46 cf. B.22-23, 25, some D:G; 440 no arch?; 441 *obv.* no stops = Rich.64 (small lis), *rev.*
 D.H.R3 saltire grained; 443 HS 1036, cf. HS 1038 and B.26
 447-8 H *obv.* HS 1037, die duplicates, V cf. B.25, *rev.* 447 'OP GI'
 449-52 varieties, two D:G; 449 *obv.* no arch pl. 13, 58, *rev.* crown (p), cf. Rich.72 and 77; 451 V-OP
 D GI; 452 *obv.* no stops, *rev.* rippled and fluted saltire, GI
 453-6 R4 uncertain
 - NM 1988 loan, *obv.* crown, pellet above left fleur
 - Rich.79bis M-AR
 - B.21 fig. 834 *obv.* ends OR

IIIb. *obv.* crown as a., *rev.* lis i.m. all petals straight, crown (p)

- 457-8 D:G V GI, cf. B.24 fig. 835 (*obv.* = B.25 – IIIa); Rich.76 and 75 (*rev.* pl. 13, 59)

IIIc. *obv.* crown has pellets on cusps (fig. 1.5), *rev.* lis smaller, narrow

- IIIa/c? Rich.64

- 436 *obv.* V = Rich. 70 and 1987 ex Murray (cf. B.20), *rev.* GI, saltire rippled and fluted (pl. 13, 60)
 - Rich. 81 D:G *rev.* error BVRG; large lis
 - B.19 fig. 833 *obv.* ends VM, *rev.* lis?

IIId. *obv.* crown arch decorated, *rev.* crown and lis as a.

- 459 B.- V GI, saltire arms punched separately (pl. 13, 61-2, and see 67)

Group 2 ctd, Class IV (for B.27-28 see IIb)

Obv. crown small, decorated arch (fig. 1.6-7), letters like III, *rev.* crown usually (p), lis i.m. large or smaller

IVa. *obv.* crown like (t), two-line hoop often not distinct, M may have wide-angle

- 460 *obv.* OR = B.29, Rich.82, 1987 ex Murray and another *rev.* all different, most 'wide M'; cf. OR (?) St coll.
 461-2 461 *obv.* pl. 13, 63; 462 *obv.* 'wide M', *rev.* pl. 13, 64; cf. B.30 fig. 837 (not B.29) and B.31; all really D:G,V, 'OP GI'
 465H HS 1041 prob. = *obv.* B.31 = Rich.56 (*rev.* 'OP GI')
 - Rich.74 VM GI

IV b. *obv.* crown cross-like central trefoil, single-line hoop

463-4 463 *obv.* pl. 13, 65, *rev.* saltire rippled; Rich.83; HS 1039 (·OP GI·) and 1040
D

Group 2 ctd. Class Va

Obv. larger crown, central cross, two-line hoop (fig. 1.8), *rev.* cinquefoils smaller, two sizes of lis
Va(i). *obv.* decorated arch, coarser thistle

- IVb/Va(i) Rich.85 *rev.* lis small, saltire arms separate (pl. 13, 67, see 62)
466, 466AD *obv.* 466 (pl. 13, 66) = Rich.84 ·DG· v? ·GI· lis ?, cf. B.33 lis large
- Rich.89 *obv.* beaded arch = Rigg.484 pl. 13, 68, *rev.* Vb(i)), *rev.* ·OP GI·
- B.32 fig. 838 VM GI·

Va(ii). *obv.* plain arch, thistle mainly neater ball, *rev.*(p) var., lis usually large

467 *obv.* oval thistle, cf. Rich.86bis and B.36, *rev.* saltire part fluted, small lis; (B.36 = 36bis,
obv. and *rev.* fig. 840, *rev.* six dots in field, see p. 00)
468-76 *obv.* cf. B.34 unfluted saltire, several apparently ·DG·; 468 *obv.* = Rich.86 v?, *rev.* GI· (pl.
D2.H 13, 70); 473 v. error ? GI·; 474 v GI·; 476 ·V· (pl. 13, 69) GI·; HS 1042 v GI·
- *obv.* B.35 fig. 839 (not B.34) = B.35bis M·AR
- Rich.87 OR
- St coll. VM
477-8 R2 uncertain

Va(iii). *obv.* no arch; *rev.* plain saltire

479-83 cf. B.37 fig. 841 (*rev.* small lis); 482 HS 1043 large lis
D,H,R

Group 3. Class Vb-c

D·G·R· begins and SCOT·ORVM or VM· invariable; new lettering soon includes reversed *W* invariably; *rev.* saltire soon strongly fluted, new lis i.m. with three-spike foot, ends of crown's hoop hooked

Vb(i) *obv.* crown as Va(ii), plain arch sometimes lost in border, *rev.* very large cinquefoils, plain saltire, B. fig.842

484 Va(i)/b(i) *obv.* beaded arch (pl. 13, 68) = Rich.89, *rev.* N
485 *obv.* = B.38, cf. Rich.93 (pl. 13, 71), *rev.* N, ·OP GI· (pl. 13, 72, 485); St coll. *rev.* N, ·OP GI·
Vb(ii) *obv.* crown no arch, lower line of hoop may be hooked as *rev.* (fig. 1.9), *rev.* as b(i)
- Rich.95bis *rev.* reversed *W*, ·OP GI·; Rich.96 similar, *obv.* no stops

Vc. *obv.* crown smaller and lower (fig. 1.10), has central trefoil, no arch, hoop shows interior by hooks or complete oval; R generally with front serif (shortens); *rev.* crown hooked as Vb, saltire soon strongly fluted, cinquefoils small and more pentagonal, reversed *W*

Vc(i) *rev.* saltire still plain, lis as Vb

- Vb(i)/c(i) B.39 fig. 843, *rev.* plain R, ·OP GI·?; Rich.93bis *obv.* = Rigg.485, *rev.* R? ·OP GI·;
Rich.92 similar, seriffed R
- B.40 *obv.* fig. 844 .+., seriffed R, ·OP GI·; 1954.422 (d-s) similar, +

Vc(ii) *rev.* saltire strongly fluted henceforward, *obv.* additional stops common

- c(i)/c(ii) Rich.97 *obv.* = B.40, *rev.* ·OP GI·; B.42 *obv.* = 1954.422, *rev.* OP GI
- B.41 fig. 845 *rev.* ·OP GI·, dots in field accidental ?
- Rich.97bis (*obv.* pl. 13, 73) and 101 (*obv.* two different Ms, *rev.* pl. 13, 74) .+., ·OP GI·;
similar 99 OP, error B reversed, and 100 +.
- 1955.644 Braeside *obv.* ·+· +, *rev.* ·OP GI·

Vc(iii) *rev.* lis has exceptional wide foot (pl. 13, 76)

- Rich.91 *obv.* .+., *rev.* OPPI·DVM GI·, *rev.* = Rich.98 .+.; BM Scot. Coinage pl. xi.155 OP GI

Vc(iv) *obv.* pellets added to crown's hoop and cusps (fig. 1.11) *rev.* lis as c(iii)

– c(iv)/c(i) Rich.94 *obv.* plain R, .+. , *rev.* plain saltire, .OP GI

– c(iv)/c(ii) Rich.102 .+.

486 *obv.* + D.G. *rev.* .OP GI (pl. 13, 75–6), cf. B.44 fig. 846, *recte* .+., as B.45, lis?: Rich.103 +

Group 3, Class Vd – was beginning of B. Class VII (p. 133)

Vd(i). *Obv.* large crown, strawberry-leaf centre, pellets on cusps, hoop oval? (fig. 1.12) thistle like Vc(iv); serified R continues but is replaced by plain; other new letters include ornamented O; *rev.* lis like Vb–c (i–ii) and hooked single-line hoop, cinquefoils like Vc may be 'pierced' by light circle

B.63 fig. 854 .OP GI; Rich.126 (pl. 13, 77–8); 1955.647 Braeside .+., .OP GI; Rich.127 *rev.* plain O

Vd(ii) *obv.* double-arch crown, two-line hoop (fig. 1.13), serified R *rev.* only

– Rich.130 *obv.* (pl. 14, 79) .+., = Rich.128 (*rev.* GI under BV pl. 14, 80); Rich.129 .OP GI; B.64 fig. 855 plain R only, ornamented O and reversed M *recte*, *rev.* crown as VIa

Group 3 ctd, Class VI

VIa (See p. 133). *Obv.* crown of three larger and two smaller lis or crosses *rev.* crown two-line hoop without hooks, cinquefoils with larger centres normally pierced; R with front serif rare, O still ornamented at first, narrower M also replaced later (fig. 3.1)

VIa(i) *obv.* crown poorly drawn, low double arch, straight hoop (fig. 1.14), thistle smooth oval, B. fig. 853

– B.62 = B.62bis = Rich.123bis = *obv.* Rich.123 (pl. 14, 81–2) .+., .OP GI; cf. Rich.124 similar; St coll. no extra stops

VIa(ii) *obv.* crown single arch, hoop still straight (fig. 1.15), thistle may be more jagged

487 *obv.* .+., flawed = 1963.612 Noranside, *rev.* .OP GI (pl. 14, 84), .OP GI; cf. 1987 ex Murray *obv.* .+., (pl. 14, 83), *rev.* .OP GI; Rich.109 .+.

VIa(iii) *obv.* no arch, *rev.* cinquefoils slightly larger

– Rich.111 *obv.* .+., pl. 14, 85; IIS 1045 (*rev.* GI); B.52 fig. 848 *obv.* (*rev.* VIb(i–ii)); fig. 848 *rev.* is B.51)

VIa(iv) *obv.* large crown, no arch, sides joined to strongly curved hoop (fig. 1.16)

– St coll. (pl. 14, 86–7) *obv.* .+., *rev.* lis?, .OP GI, crown upside down, cinquefoils as a(iii)

VIb. *Obv.* crown single arch, narrower hoop curved, thistle coarsely jagged – B. fig. 847 and variants, A has broken lob-top; *rev.* larger composite (?) lis

VIb(i) *obv.* crown's sides not joined to hoop (fig. 1.17), narrow M's right leg bent; large slender cinquefoils, piercing often not evident

– a(ii)/b(i–ii) St coll. .+ (dots by pellet accidental?) .OP

– a(iii)/b(i–ii) B.52, *rev.* not ill.

– B.48 R with front serif; Rich.108 GI; Rich.106bis *obv.* pl. 14, 88

VIb(ii) *obv.* top line of hoop joined to sides of crown; cinquefoils as b(i)

– b(ii)/a(i) B.49 small cinquefoils, .OP



FIG. 3 Distinctive and damaged letters in Groups 3–4.

488 *obv.* = B.46 fig. 847, *rev.* 'OP = Rich.120 (*obv.* c(ii)); cf. B.47 'OPGI', B.50 GI', Rich.104bis
pl. 14, 89–90 .+. ; 107 .+. GI' ; 110 *obv.* R with front serif, 'OP

VIb(iii) short square M (fig. 3.2), cinquefoils as b(i)

– Rich.104 (pl. 14, 91–2) and 106

VIb(iv) *obv.* crown normally as b(ii), plain O returns, new letters include wide sloping M soon sharp-topped (fig. 3.3), B. fig. 849, thistle neatly jagged; *rev.* stout cinquefoils like VIa but larger (c.4mm) and strongly pierced
– b(i–ii)/b(iv) B.51 *obv.* .+. , *rev.* M with 'ears' fig. 848 (not B.52); St coll. *obv.* = Rich.110,
rev. narrow M but new cinquefoils, lis without bar
– B.53, and fig. 849 *recte* B.54 (cinquefoils like b(i–iii) but larger) sharp M; Rich.114 *obv.*
plain and ornamented O (pl. 14, 93–4)

VIb(v) *obv.* crown has rectangles on hoop (fig. 1.18), B.–, sharp M, wider thistle

– b(v)/b(i–ii) St coll. bis
– Rich.115bis cinquefoils as b(iv)
– Rich.115 (42 gr. chipped) = *obv.* St coll. (33 gr.) (pl. 14, 95–6), *rev.* cinquefoils as c(i)

VIc. *obv.* smaller crown, arch decorated (fig. 1.19), thistle like b(v), cinquefoils like a(iii)

VIc(i) *obv.* crown's sides not joined to hoop; new squarish M in two sizes (fig. 3.4)

– VIc(i)/VIa(ii) AS 1047 'OP GI'
– B.60 fig. 852 *recte*; B.59, Rich.117, 119; AS 1046 *obv.* M as VIb(iv); HS 1044, 1049–50
489 pl. 14, 97–8, *rev.* wide \mathcal{H} (as B.53, 55–56, Rich.117bis)
– Rich.113 *obv.* no arch, *rev.* large lis i.m.

VIc(ii) *obv.* crown's sides generally continuous, slightly sloping M usually has 'club-foot' (fig. 3.5), B. fig. 850

490 VIc(ii)/b(i–ii); cf. Rich.120 *obv.* .+. , nicked apex A appears (pl. 14, 99), *rev.* OP
491–2 club-foot M (pl. 14, 100), cf. B.65 and 51; Rich.118 *obv.* broken lob-top A (as B.60, 65–7),
rev. pl. 14, 101; 492 St coll.
– St coll. *rev.* crown upside down
493D VIc, VIc(ii)

c(iii) similar but hair-line inner circles – temporarily, M as c(ii) sometimes complete

– B.56 = *obv.* Rich.117bis (pl. 14, 102), *revs.* beaded inner circle
– St coll. (pl. 14, 103–4) *obv.* crown two-line decorated arch, cf. VIIa; hair-lines *obv.* and
rev.

VId. *obv.* crown with 'wedges' on cusps, may have trefoil on arch (fig. 1.20), new sloping M right foot defective (fig. 3.6) B. fig. 851; beaded inner circles resume; *rev.* narrow lis i.m., crown single-line hoop, cinquefoils as c., saltire's left lower edge sometimes broken (see pl. 14, 108)

– VId?/c(ii) HS 1051
494H HS 1048 'OP GI' like Rich.121 (pl. 14, 106); cf. B.57 *obv.* = Rich.119bis (pl. 14, 105), and
B.58 fig. 851 = *obv.* Rich.119, *revs.* OP GI

Group 3 ctd, Class VIIa (see Vd and pp. 25–6)

Obv. crown three lis of strawberry leaves, two-line arch, pellets on cusps (fig. 1.21), finer-meshed thistle, blurred letters, B. fig. 856

VIIa(i) new similar M, left foot becomes defective (fig. 3.7), broken-top A continues, *rev.* like VId, sometimes larger lis

– VId/VIIa(i) St coll.
– VIIa(i)/VId St coll.
495–6 cf. B.65 fig. 856, B.66–68 (all *recte* \mathcal{H} reversed – 67 .+. illusory)
495 *obv.* M left serif broken as Rich.116 and AS 1052; 496 *obv.* M left leg broken;
Rich.131bis (pl. 14, 107–8) broken saltire

- B.66 *obv.* M·A·R, M in field as a(ii) = AS 1053 (with *rev.* ·O·P·G· like B.68 and Rich.133)
- Lockett coll. no arch

VIIa(ii) square M (fig. 3.8), A with nicked apex *rev.* two-line hoop

- 497 *obv.* = Rich.131 fig. 117 (**pl. 14, 109–10**)

Group 4. Class VIIb

Obv. i.m. cross-potent, crown larger, usually without arch (fig. 1.22), occasionally coarser thistle; new letters include N instead of N; nicked A regular, beaded inner circles gradually dropped; *rev.* crown like VIIa(ii), also lis which becomes like a cross

VIIb(i) beaded circles, *rev.* small tight pentagonal cinquefoils

- VIIa(ii)/VIIb(i) St coll.
- VIIb(i)/VIIa(ii) Rich.137 *obv.* **pl. 14, 112**; Rich.139 *obv.* = Rich.138
- 498 B.- new crown, normal circles
- St coll. *obv.* crown as VIIa (**pl. 14, 111**)
- Rich.138 *obv.* coarser thistle, inscription starts to left of crown = Rich.139 (**pl. 14, 113**), *rev.* **pl. 14, 114**
- St coll. *rev.* b(iii) cinquefoils

VIIb(ii) *rev.* i.m. cross-potent also, exceptionally

- B.- Rich.145 saltire not fluted, cinquefoils as VIIa, inscriptions d.s. (**pl. 14, 115**)

VIIb(iii) beaded inner circles only on *obv.* (o) or *rev.* (r), B.-; *rev.* cinquefoils more open than b(i)

- (o) Rich.134, Rich.144
- Rich.112 (not VI) *rev.* crescentic annulet below saltire (**pl. 14, 118**), cf. St coll. and another
- 499 obliterated annulet (?) below saltire, cf. VIIb(v)
- (r) Rich.143 **pl. 14, 116–17**, *rev.* = St coll. (*obv.* VIIb(v)); Rich.140 no stops, DGRA illusory (d.s.)

VIIb(iv) no beaded inner circles, cinquefoils as b(iii)

- B.70 fig. 858, B.71, Rich.136, Rich.141–2; Rich.135 no stops, *obv.* **pl. 14, 119**

VIIb(v) as b(iv) but two-line arch added to *obv.* crown (fig. 1.23), cf. VIIa; no stops

- VIIb(v)/VIIb(iii) St coll., *rev.* = Rich.143
- B.69 fig. 857; St coll. thistle incompletely diced (**pl. 15, 121**)
- 1957.366 *ex* Lockett (= St coll.) *obv.* **pl. 14, 120**, *rev.* annulet below saltire partly obliterated ?

Group 4 ctd. Class VIII (see J.K.R. Murray, *BNJ* 37 (1968) 105–7)

Obv. i.m. cross-potent stronger; ·D·E·I·G·R, crown decorated, double arch and complete hoop (fig. 1.24); *rev.* i.m. cinquefoil in three sizes, side cinquefoils very large; smaller letters; beaded inner circles; ·O·P·G· normal

- VIIa, *rev.* fluted saltire, smallest i.m., side cinquefoils have one defective leaf
- Rich.148 and 1963.613 Noranside (*obv.* **pl. 15, 122**), *revs.* defective D
- 1955.648 Braeside, defective D both sides; 1964.1004 (**pl. 15, 123**)

VIIIb. *rev.* slender plain saltire

VIIIb(i) cinquefoils as VIIa

- 500–1 cf. B.72bis, 501 *rev.* i.m. double-punched
- St coll. small i.m. loses leaf

VIIIb(ii) *rev.* medium i.m., side cinquefoils larger, more angular

- B.72 fig. 859, Rich.146–7, defective D replaced by larger; Rich.151 *rev.* defective old D (**pl. 15, 125**); Rich.147 .+.
- Rich.149 ·D·G·R· (**pl. 15, 124**)



FIG. 4 Obverse crowns on Mary half-bawbees.

VIIIb(iii) *rev.* largest i.m.; side cinquefoils as (ii)

– B.73 *rev.* **pl. 15, 126**; Rich.146bis. 150

Half-bawbees

Design like bawbees but 'D·G·R' and single cinquefoil below saltire

Type A

Obv. thistle 'A' as on James' halves and similar to Mary class Ia, VM ending normal; *obv.* (fig. 4.1) and *rev.* crowns like James' Aa, *rev.* i.m. large lis like Mary Ia – central bar may be omitted; R like Ib(i) (cf. fig. 2.2); saltire unfluted

502 *obv.* high arch, sharp-top A, *rev.* d.s., lis lost (16.0 gr); cf. Rich.157, and St coll. (**pl. 15, 137–8**)

Ab. *rev.* very small lis like class Ib

(i) R like Ib(iii) (cf. fig. 2.3)

– B.1 fig. 862 *obv.*, *rev.* **pl. 15, 140**; B.2 fig. 862 *rev.*, *obv.* error MARI·D·G·R; St coll. (**pl. 15, 139**)

– B.2 but Coats. 1921.1294, no arch, SCOTOR (**pl. 15, 141**)

(ii) R's front leg short, squared off

– St coll. (**pl. 15, 142–3**), *rev.* = AS 1059, 'cog-wheel' mark at second P

(iii) R resembles a B, from James' half-bawbee fount

– Rich.158 VM (**pl. 15, 144**) like Type B, lob-top A possible; St coll. VM *rev.* lis broken? (**pl. 15, 145**)

Type B

Obv. thistle 'B', smaller and jagged; crowns similar to type A; lob-top A, new R, round o; lis with bar-and-dot foot; final stops common, cf. group 2; saltire still unfluted

– Rich.159 *obv.* i.m. low, one cusp double-punched, MARI·A·VM, *rev.* crown (t) as usual, G (pl. 15, 147); *obv.* = 1914 Ayr and 1957.368 ex Lockett (**pl. 15, 146**), latter *rev.* crown (p); M like IIa

– Murray sale 1987, 241 ill., M like IIc–IV, VM G

Type C

Obv. thistle 'C', dicing may be widely spaced, crown's arch lop-sided, central spike tall (fig. 4.2); new letters with reversed I, successive forms of R and M (fig. 5), also lis i.m.; cinquefoil as A–B; saltire fluted as group 3

Ca. full rear-serif R, *rev.* lis has narrow dart-shaped foot

(i) complete M (right fork higher than left)

– Rich.160 *obv.* open dicing with triangular area (**pl. 15, 148**) = 1926.84 RSM, oblique-top A; AS 1061 lis i.m. clear

(ii) M breaking, then loses right serif

– a(i)/a(ii) B.4 *obv.* dicing closer, *rev.* M half-serif

– a(ii)/a(i) NM unnumb. no prov. *rev.* **pl. 15, 149**

– 1957.369 ex Lockett, *obv.* = B.3 fig. 863, M right serif lost, *rev.* M half-serif

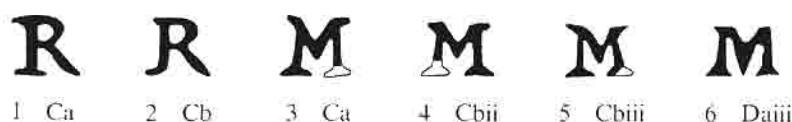


FIG. 5 Distinctive and damaged letters on Mary half-bawbees.

Cb, half-serif on R rear foot

(i) M as Ca(ii)

- b(i)/a(ii) B.3bis fig. 863 *rev.* only, *obv.* M serif lost (**pl. 15, 150**)
- a(ii)/b(i) Fitzwilliam Mus. *obv.* = B.3
- HS 1063 M right serif lost both sides

(ii) new M (forks level), left serif usually appears broken – see fig. 5; lis i.m. as Ca

- a(ii)/b(ii) B.3 *obv.* fig. 863
- b(ii)/b(i) HS 1062 Ms with opposite legs broken
- 1914 Ayr (**pl. 15, 151–2**), *obv.* = 1963.614 Noranside and BM E2596 M complete and defective variously on each, *revs.* all different but M complete; cf. AS 1060 and Rich.164

(iii) 'third' M (left fork higher than right), *rev.* lis i.m. wider foot

- b(ii)/b(iii) St coll.
- b(iii)/b(ii) HS 1064
- Rich.162 (**pl. 15, 153–4**) M complete both sides, nick in D as in part b(ii); St coll. *obv.* 'triangular dicing' (**pl. 15, 155**)

Type D

Obv. thistle 'D', finer meshed, *rev.* saltire fluted

Da, *obv.* crown heavier, double-line hoop (fig. 4.3)

(i) letters and cinquefoil as Cb(iii)

- 1957.370 *ex* Lockett, no room for arch, nick in D enlarged

(ii) *obv.* as (i), *rev.* larger cinquefoil begins, letters and inner circles may be blurred

- St coll. *obv.* crown no arch, M complete, D large gap, bar inside O, A with nicked apex (**pl. 15, 156–7**); Rich.163 fig. 118 *obv.* M defective right serif, *rev.* d.s.

(iii) new letters, medium-sized, include long-centred M (fig. 5.6)

- a(iii)/a(ii) BM 1914, 12–6, 58 (Ayr) *obv.* crown no arch, no inner circle, cf. class VIIb
- St coll. *obv.* faint inner circle virtually unbeaded, *rev.* small cinquefoil, exceptionally ? (**pl. 15, 159**)

Db, *obv.* very poor crown (fig. 4.4), marginal circles fine blurred beading, *obv.* and *rev.* very small letters, usually blurred and M broken right

- Db/a(ii) BM 1914 12–6, 60 (Ayr) *obv.* letters all crisp, only stops 'DG', *rev.* large letter, wide \mathcal{N} cf. class VIc
- Db/a(ii) NM unnumbered, no prov., *obv.* **pl. 15, 160** = 1950.561 and another (two Dc *revs.*), *rev.* M as Rich.163, large cinquefoil (**pl. 15, 158**)
- St coll. small letters both sides, *rev.* \mathcal{N} still reversed

Dc, *obv.* i.m. cross-potent, mainly new letters, like Da(ii) but slightly larger, include N, *rev.* i.m. cinquefoil instead of lis, saltire still fluted (Murray, *BNJ* 37 1968)

Dh/De 1950.561 found Dornoch, *rev.* strongly beaded inner circle, same small D with defective serif as class VIIa (pl. 15, 162, see 125)

De/a(ii) St coll. *obv.* no inner circle, defective D, error in centre RM for MR (pl. 15, 161)

De/De Rich.161 clearer letters include large D, finely beaded inner circles, *rev.* cinquefoils widely 'pierced' (pl. 15, 163-4, also *Scot. Coinage* pl. xi, 159 – not BM, and *BNJ* 37 (1968) pl. xi, 31-2)

Key to the plates

Plate 12

A B C D E F G

1. Jai
2. Jai
3. Jai/(b)
4. Jai
5. Jaii
6. Jb
7. Jb
8. Jb
9. Jc/(a)
10. J(c)/a
11. Jc
12. Jc
13. Jc
14. Jc
15. Jc
16. Jdi
17. Jdi
18. Jdi
19. Jdi
20. Jdi
21. Jdi
22. Jdii
23. Jdii
24. Jdii
25. Jdii
26. Jdii
27. Jdii
28. Jdii
29. Jdii
30. Jc
31. lai
32. lai
33. laiii/bi
34. lbi
35. l(a)/bi
36. lbi

Plate 13

37. lbi
38. lsii
39. lsii
40. lsiii
41. lsiv/(i-)
42. ls(iii)/iv
43. lsv
44. ls(iii)/v

45. lbiii
47. lci
48. lci
49. Hai
50. Hai
51. Haii
52. Haii
53. Hlb
54. Hlb
55. Hlc
56. Hlc
57. Hlc
58. Hla
59. Hlb
60. Hlc
61. Hld
62. Hld
63. IVa
64. IVa
65. IVb
66. Vai
67. (IVb)/Va
68. Vai/(bi)
69. Vaii
70. Vaii
71. Vbi
72. Vbi
73. Vcu
74. Vcu
75. Vciv
76. Vciii-iv
77. Vdi
78. Vdi

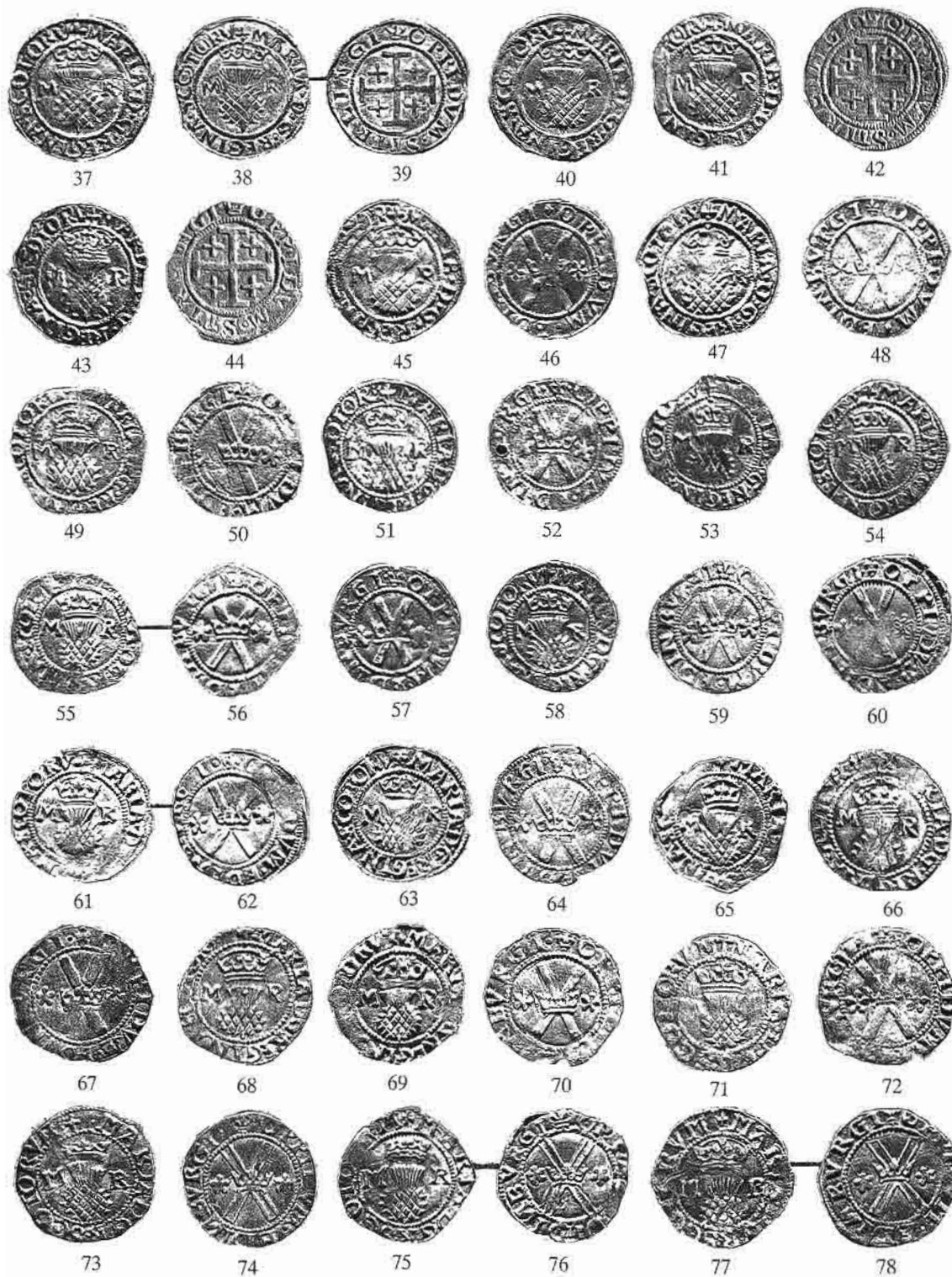
Plate 14

79. Vdii
80. Vdii
81. VIai
82. VIai
83. VIaii
84. VIaii
85. VIaiii
86. VIaiv
87. VIaiv
88. VIbi
89. VIbii
90. VIbii
91. VIbiii
92. VIbiii

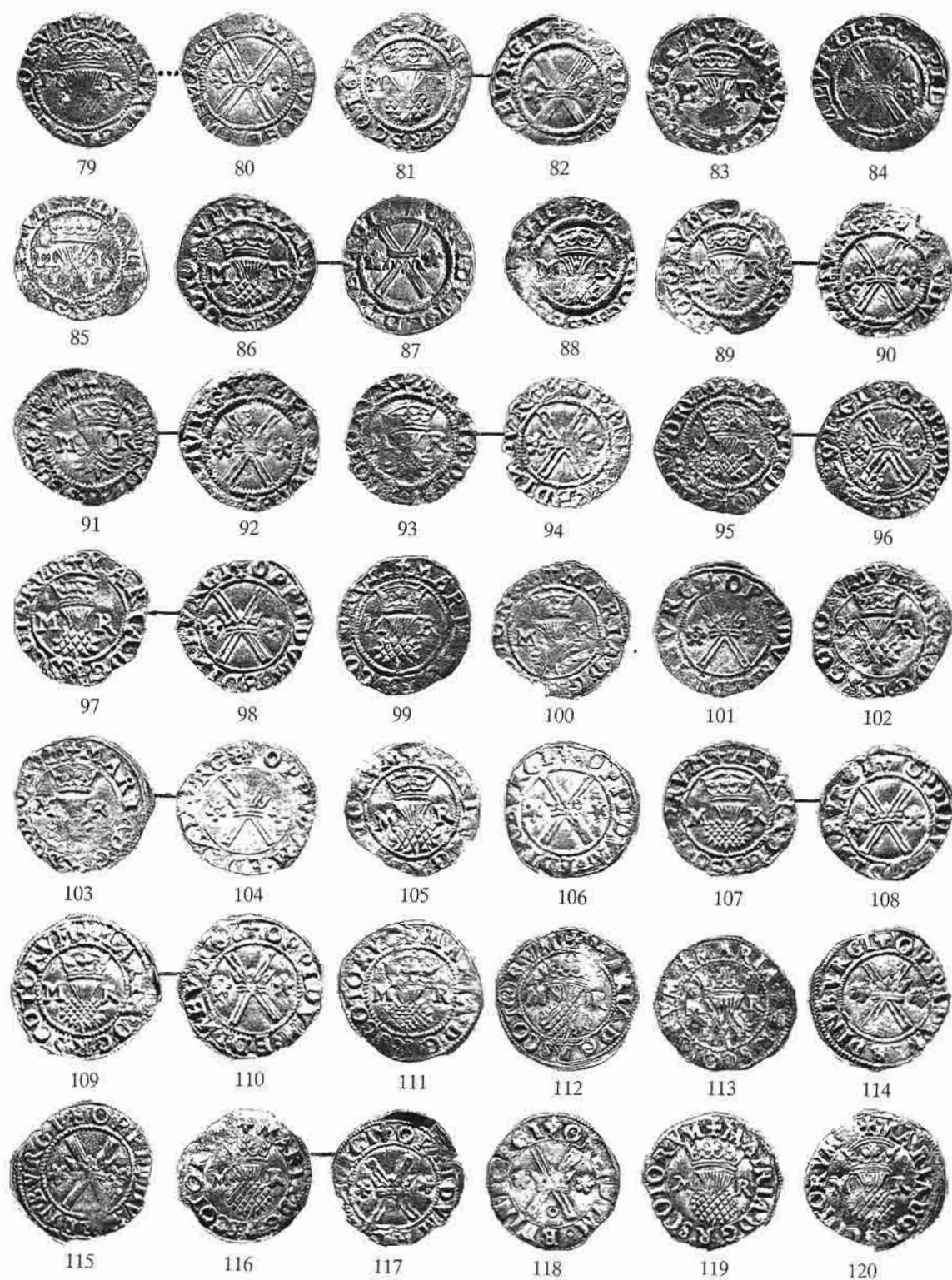
93.	VIbiv	128.	JA
94.	VIbiv	129.	JA
95.	VIbv	130.	JA
96.	VIbv	131.	JA
97.	VIci	132.	JA
98.	VIci	132.	JB
99.	IVcii	133.	JB
100.	VIcii	134.	JB
101.	VIcii	135, 135a, 136 and 136a.	JQ
102.	VIciii	137.	Aa
103.	VIciii	138.	Aa
104.	VIviii	139.	Abi
105.	VIId	140.	Abi
106.	VIId	141.	Abi
107.	VIIai	142.	Abii
108.	VIIai	143.	Abii
109.	VIIaai	144.	Abiii
110.	VIIaai	145.	Abiii
111.	VIIbi	146.	B
112.	Vii bi/(aii)	147.	B
113.	Vii bi/(aii)	148.	Cai
114.	VIIbi	149.	C(aii)/ai
115.	VIIbii	150.	Cbi/(aii)
116.	VIIbiii	151.	Cbii
117.	VIIbiii	152.	Cbii
118.	VIIbiii	153.	Cbiii
119.	VIIbiv	154.	Cbiii
120.	VIIbv	155.	Cbiii
Plate 15		156.	Daii
121.	VIIbv	157.	Daii
122.	VIIIa	158.	D(b)/aii
123.	VIIIa	159.	Daiii
124.	VIIIbii	160.	Db/(aii)
125.	VIIIbiii	161.	Dc/(aii)
126.	VIIIbiii	162.	D(b)/c
127.	JA	163.	Dc
		164.	Dc



STEVENSON: BAWBEES OF JAMES V AND MARY (1)



STEVENSON: BAWBEES OF JAMES V AND MARY (2)



STEVENSON: BAWBEES OF JAMES V AND MARY (3)



STEVENSON: BAWBEES OF JAMES V AND MARY (4)

MINT OFFICIALS AND MONEYERS OF THE STUART PERIOD

C. E. CHALLIS

DURING the early part of the seventeenth century the mint continued to operate and be accounted for very much in the same way as it had been under Queen Elizabeth. Then, at the start of Charles I's reign, it was decided for revenue raising purposes to bring in a fresh level of accountability by making the master-worker as well as the warden directly responsible to the Crown. From 1626, therefore, there are two series of audited mint accounts and, although some short gaps in the 1650s, 1660s and 1670s mean that the record is deficient in the order of some ten per cent, it is still outstandingly good and is necessarily the starting point for any analysis of Stuart mint personnel.

The information which is contained in the main series of accounts may sometimes be supplemented by that from subsidiary accounts – the particulars of account, as contemporaries often called them – which contain information that appears in the final account in summary form only. The importance of the Establishments of officers attached to the formal indentures between the Crown and the master-workers is obvious enough, as is the wealth of detail which emerges from correspondence and reports amongst the papers in the State Paper Office and the Treasury. Copies of formal grants of office were, like copies of mint indentures and commissions, enrolled in Chancery and in passing it is worth noting that in those instances where such grants were in respect of two persons but it is clear from other evidence that only one person was actually remunerated for the office, it is only the recipient of the fee who is listed below. For the later Stuart period, the records of the mint itself, now housed in the Public Record Office, are an increasingly valuable source of information and much can be made throughout the period as a whole of testamentary records. It is upon these sources, supplemented partly by correspondence and accounts amongst papers now in the British Library and partly by secondary literature, that the list which follows is constructed.

Relating as it does primarily to mint officials – personnel who had a formal grant of office and a specific salary – the first part of the list contains careers which are particularly detailed and, for the most part, complete. Officials were customarily paid on a quarterly basis and, in the event of someone dying in post, payment was usually made to whichever quarter day was nearest. It is for this reason that in those instances where a precise date of death is known the mint accounts, and therefore the dates given here, sometimes appear to show an official leaving office just before that date or continuing in office some weeks after it.

Additional to the many mint careers which are known in some detail are many more which are fragmentary or at best skeletal, the most common explanation being either that the formal accounts do not survive at that point or that the person concerned was appointed not by the Crown but by one of the officials themselves, either to act as deputy or, in the case of the master-worker, to perform melting and other tasks, the details of which were of no concern to the Crown and therefore went unrecorded in the accounts. Strictly speaking, some of those listed here were not mint employees at all – Thomas Ayres who marked silver ingots at the Exchequer in 1697, is a case in point – but have been included on the grounds that they were directly connected with the mint's activity at the time, in this case the great recoinage of silver.

About the moneyers and labourers contained in the second part of the list, it is much more difficult to be precise, quite simply because they worked on piece rates for the master-

worker and were required by government to keep no record either of their number or of their descent. Their records were their own and have now seemingly entirely disappeared. What we do in fact know of the moneyers is, therefore, essentially the accident of chance, which supplies us with information from a miscellany of sources which include wills, legal proceedings, burial registers, or listings by the moneyers themselves in the process of defending or promoting their cause.

The final section of the list is concerned with the officials responsible for, or concerned with, the manufacture of tokens or coins in base metals authorised by the Crown. Some of these men are as clearly connected with the mint as are the base issues they produced in their normal surroundings in the Tower, but by far the greater number, some eighty-nine per cent, have no known connection with the mint and were concerned with a production process which was carried on outside the mint. Providing this distinction is made, the utility of gathering together in one place the names of all those who were engaged in a common purpose, the production of base-metal issues, seems obvious enough.

Although essentially an offshoot of work undertaken in connection with writing chapter 3 in *A New History of the Royal Mint*, this list has benefited at a late stage through close scrutiny by Mr H. E. Pagan, who has himself studied mint personnel in the Restoration period and lectured to the Society on that subject. To my original list of 774 names he enabled me to add a further fifteen, to remove some duplication, and to emend or expand detail in numerous other cases. I am particularly grateful for the information he extracted from the burial registers of St Peter ad Vincula, the church in the Tower whose vicar and sexton annually received payment from the mint. At the time of his search Mr Pagan extracted the data relevant to all those whom he then knew to have had a mint connection but he quite recognises that now that this list has been extended it may well be that the registers could be of further help.

The form of entries in the list follow that set out for Tudor officials printed in *BNJ* 45 (1975), 53.

The principal abbreviations used in the list are as follows:

<i>Answer of the Moniers</i>	<i>The Answer of the Corporation of Moniers in the Mint at the Tower of London, to two false and scandalous Libells printed at London, and lately come forth without date</i> (Printed by the Corporation of Moniers, 1653) [by Thos Violet]
<i>APC</i>	<i>Acts of the Privy Council of England, 1542–1631</i> , edited by J. R. Dasent <i>et al.</i> , 46 vols (London, 1890–1964)
Boon	G. C. Boon, <i>Cardiganshire Silver and the Aberystwyth Mint in Peace and War</i> (Cardiff, 1981)
Burial Register	The Burial Registers of St Peter ad Vincula
<i>CJ</i>	<i>Journals of the House of Commons</i> , 1547 ff. Repr. London, 1803 ff. Index to vols I–XVII by T. Vardon and T. E. May (London, 1852)
<i>CSPD</i>	<i>Calendar of State Papers, Domestic, 1547–1704</i> (London, 1856–1924)
<i>CTB</i>	<i>Calendar of Treasury Books, 1660–1718</i> , edited by W. A. Shaw <i>et al.</i> , 32 vols (London, 1904–62)
<i>CTP</i>	<i>Calendar of Treasury Papers, 1557–1728</i> , edited by J. Redington, 6 vols (London, 1868–89)
<i>DNB</i>	<i>Dictionary of National Biography</i>
<i>Foedera</i>	T. Rymer, <i>Foedera, Conventiones, Literae et cuiuscunque Generis Acta Publica</i> , 2nd edn, 20 vols (London, 1727–35)
Forrer	L. Forrer, <i>Biographical Dictionary of Medallists</i> , 8 vols (London, 1904–30)

GH	Goldsmiths' Hall, London
GL	Guildhall Library, London
HMC	Historical Manuscripts Commission
LJ	<i>Journals of the House of Lords</i> . 1509 ff. Index to vols 1-X (London, 1846)
<i>New History of the Royal Mint</i>	<i>A New History of the Royal Mint</i> , edited by C. E. Challis (Cambridge, in the press)
<i>Newton Correspondence</i>	<i>The Correspondence of Isaac Newton</i> , edited by J. F. Scott, vol. IV (Cambridge, 1967)
PRO	Public Record Office, London
Ruding	R. Ruding, <i>Annals of the Coinage of Great Britain and its Dependencies</i> , 3rd edn, 3 vols (London, 1840)

Mint Officials

Acheson, John under-engraver, Tower, £40 p.a. appointed to succ. John Rutlinger who failed to exercise the office 1603-?4 (PRO. SP 14/5 no.26)	Ashby, William (<i>d.</i> 1632/3) porter (with Thos Knyvet), Tower, £10 p.a. succ. Edm. Knyvet in 1629/30-1632/3 when succ. by John Denby and Thos Knyvet (PRO. AO 1/1598/28-31)
Allen, Thomas clerk to deputy master-worker, Norwich, £40 p.a. 24 June 1696-24 June 1698 (PRO. E 351/2106)	Ashley (Astiley), Elizabeth attendant in receipt, Tower, £10 p.a. 1 Jan. 1709-14. . . . (PRO. AO1/1606/90-5)
Ambrose, Jonathan, goldsmith of London melter paid piece rates by master-worker, Tower, 29 Nov. 1681 1681-98 (PRO. E 351/2103-5, Mint 1/3 fo.85; BL. Additional Charter 15,182)	Astell, Thomas under-engraver, Tower, 22 June 1660, £40 p.a. 1660-24 June 1676 (CSPD, 1660-1, 73; PRO. AO 1/1601/55,58,60; E 351/2065-6)
Andrew, Samuel deputy engraver, Exeter, £40 p.a. 24 June 1696-24 June 1698 (PRO. E 351/2106)	Atherton, Philip labourer in melting house, 1697 (<i>Newton Correspondence</i> , IV, 242)
Annesly, Arthur deputy warden, Bristol, £120 p.a. 24 June 1696-29 Sept. 1698 (PRO. E 351/2106; CTB, 1700-1, 253)	Awnsham, Richard deputy weigher and teller, Chester, £50 p.a. 24 June 1696-24 June 1698 (PRO. E 351/2106)
Anthony, Charles (<i>d.</i> 1615), goldsmith of London chief engraver, Tower, £30 p.a. 1596-1615 (will proved 21 Nov.) also discharged the office of under-engraver 25 Mar. 1603-Nov. 1604 (BNJ 45 (1975), 54; PRO. Prob. 11/126; E 351/2030-40)	Aylesbury, Sir Thomas (1576-1657) commissioner (with Sir Ralph Freeman) for the master-worker, Tower, 3 Aug. 1635, £500 p.a. 3 Aug. 1635-5 May 1643 (PRO. AO 1/1628/221-1629/228; DNB)
Anthony, Thomas (son of Charles), goldsmith of London chief engraver, Tower, £30 p.a. succ. Charles in 1615-31 Mar. 1618 (GH. App.Bk.I. 148; PRO. E 351/2041-2)	Ayres, Thomas employed by Floyer and Shales to mark the ingots at the Exchequer 1697 (PRO. E 101/620/64 no.14)
	Backwell, Edward, goldsmith of London (<i>d.</i> 1683) melter (with Edw. Vyner) of booty brought in by Gen. Montague, 1656 receiver (with Sir Thos Vyner and Fran. Meynell) of

- the 'harp and cross' money demonetised in 1661
receiver of the French money received in 1662 in
payment for Dunkirk
(*CSPD*, 1656–7, 37, 89–90, 107–8, 143, 147–8; *New
History of the Royal Mint*, chap. 3; *DNB*)
- Balderson, Thomas
clerk to warden, 1680
(*PRO*, *Mint* 1/3 fo.44)
- Bannister, George
deputy warden, York, £120 p.a.
24 June 1696–29 Sept. 1698
(*PRO*, *E* 351/2106; *CTB*, 1700–1, 253)
- Barnardston, Sir Thomas (*d.* 1669)
comptroller, Tower, 26 Nov. 1649, £66 13s. 4d. and
£13 6s. 8d. for his clerk p.a.
29 Sept. 1649–1660
(*PRO*, *AO* 1/1600/49–1601/53)
- Barrow, Richard
additional clerk to warden to assist with prosecuting
counterfeiters, Tower
succ. R. Weddall 1708–14, ...
(*PRO*, *Mint* 1/8 fo.114)
- Barsbee, Walter
? deputy to Sam. Rennish at Aberystwyth
(*Boon*, p.57)
- Barson, Richard (born *c.* 1614)
smith, working for Thos Hodgkins
1650s
(*PRO*, *E* 178/6313)
- Bartlett, Samuel, goldsmith of London (*d.* 1671)
assay-master, Tower, 26 Nov. 1649, £66 13s. 4d. and
£13 6s. 8d. for his clerk p.a.
25 Sept. 1649–1660
(*PRO*, *AO* 1/1600/49–1601/53; G.E. Aylmer, *The
States Servants* (London, 1973), p.242)
- Barton, Daniel
deputy comptroller, York, £100 p.a.
24 June 1696–24 June 1698
also described as melter there
(*PRO*, *E* 351/2106; *CJ* XI, 700–1)
- Barton, Ralph
clerk to Walter Williams, assay-master, Tower, £10
p.a.
1603
(*PRO*, *E* 101/307/2 no.1)
- Beale, Bartholomew (*d.* 1674)
auditor (with Geo. Bingley), £20 p.a.
29 Sept. 1644–25 Dec. 1651
auditor (alone), £40 p.a. (see Scott)
25 Dec. 1651–25 Mar. 1655
auditor (with John Wood, succ. by Brooke Bridges)
- 1662–25 Mar. 1674
(*PRO*, *AO* 1/1670/499, 1600/43–1602/60)
- Beresford, Francis (*d.* 20 Aug. 1713)
deputy comptroller, Tower, *c.* 1698–death
clerk to warden, Tower, £40 p.a.
2 Apr. 1713–20 Aug. 1713
(*PRO*, *E* 351/2118–19, *Mint* 1/7 fo.15; *Newton
Correspondence*, IV, 375; *Burial Registers*)
- Beresford, Francis
apprenticed to John Croker, who trained him as an
engraver
25 Dec. 1711–14, ...
(*PRO*, *E* 351/2118–20)
- Beser, Richard
deputy king's clerk, Norwich, £40 p.a.
24 June 1696–24 June 1698
(*PRO*, *E* 351/2106; *T1*/48 no.52)
- Bingley, George
auditor (with Hen. Stanley), 11 Jan. 1622, £20 p.a.
24 June 1643–25 Mar. 1644
auditor (alone)
25 Mar. 1644–29 Sept. 1644
auditor (with Barth. Beale)
29 Sept. 1644–25 Dec. 1651
(*CSPD*, 1619–23, 335; *PRO*, *AO* 1/1670/499, 1600/
43–1601/51)
- Birch, Thomas – see Burgh, Thomas
- Bird, Alexander
deputy porter, Norwich, £20 p.a.
1696–8
(*PRO*, *T1*/48 no.52)
- Birdikin, Thomas
deputy warden, Exeter, £120 p.a.
1696–8
(*PRO*, *T1*/48 no.52)
- Blackborn, Joseph
deputy assay-master, Bristol, £80 p.a.
1696–8
(*PRO*, *T1*/48 no.52)
- Bowers, George (*d.* 1 Mar. 1690)
chief engraver, Tower, 19 Oct. 1689, £325 p.a.
30 Sept. 1689–Mar. 1690
for his connection with copper output, see below.
(*PRO*, *Mint* 1/5 fo.21v; *E* 351/2098; *CTB*, 1689–92
758)
- Bowles, John
clerk to deputy warden, Chester, £40 p.a.
1696
but see T. Neale's acc, *PRO*, *E* 351/2106, which
gives this post to Ric. Morley
(*PRO*, *T1*/48 no.52)

- Bowles, Nathaniel
deputy assay-master, Bristol, £80 p.a.
24 June 1696–24 June 1698
possibly the 'Mr Bowles' employed to assay ingots at
the Exchequer at this time.
(PRO. E 351/2106; BL. Lansdowne MS 801 fo.141)
- Bradford, William
labourer in assay house (not on the Establishment).
£10 p.a.
25 Dec. 1666–25 Dec. 1667
(PRO. E 351/2065)
- Bradley, —
smith, 1680
(PRO. Mint 1/3 fo.62)
- Brattle, Charles (brother of Daniel)
employed during the Great Recoinage as chief
agent in inspecting the old and weighing and telling
the new money
assay-master, Tower, £200 + £20 for his clerk p.a.
succ. his brother in 1713
(CTP, 1708–14, 549; CTB, 1713, 101)
- Brattle, Daniel
sinker of coining dies (with Giles Daniel), £20 p.a.
1 Apr. 1619–25 Dec. 1620
sinker of coining dies (alone), £20 p.a.
25 Dec. 1620–25 Mar. 1654
(PRO. E 351/2045–7, AO1/1597/23–1599/42, AO1/
1670/499, AO1/1600/43–1601/51)
- Brattle, Daniel (son of Sir John) *d.* 1713
claimed in 1698 to have acted as assay-master for 20
years before his father's death
assay-master, Tower, 14 May 1679, £200 + £20 for
his clerk p.a.
1692–Jan. 1713
(PRO. AO1/1604/77–1606/95; CTP, 1708–14, 549;
CTB, Oct. 1697–August 1698, 231, 1713, 101)
- Brattle, Giles
sinker of coining dies, Tower, £20 p.a.
1 Apr. 1612–31 Mar. 1619
sinker of coining dies (with Daniel Brattle), £20 p.a.
1 Apr. 1619–25 Dec. 1620 assists in sinking dies
1624/5, during Daniel Brattle's illness.
(PRO. E 351/2037–45, AO 1/1597/24)
- Brattle, Sir John (1629/30–1692)
assistant to Daniel Brattle, sinker of coining dies,
Tower
17 Nov. 1649–2 Oct. 1651, and 1 June–31 Oct. 1653
sinker of coining dies, Tower, £20 p.a.
25 Mar. 1654–25 Mar. 1665
a document of 1652 also refers to him as clerk to
the comptroller at £13 6s. 8d. p.a. and clerk to the
assay-master at £10 p.a.
assay-master, Tower, £66 13s. 4d. and £10 for his
clerk p.a.
allowed to exercise the office from 1665 on the
grounds that the patentee, Thomas Woodward, was
absent abroad; salary raised to £200 + £10 for his
clerk in 1667, patent 22 Feb. 1669
1665–1692 (buried 29 Nov.)
(PRO. AO 1/1601/51–1604/76; CSPD, 1664–5, 474;
CTB, 1667–8, 626; PRO. Mint 1/5 fo.1, Prob. 11/413
fo. 39; Burial Register; CSPD, 1652–3, 69–70)
- Brattle, Richard (son of Daniel)
assistant to Daniel Brattle, sinker of coining dies,
Tower
1636/7–1640/1, 1642/3, 1644/7
(PRO. AO 1/1599/35–40, 1670/499, 1600/43, 46,
48)
- Brett, George
melter, Tower, paid by master-worker
1 June 1653–30 Sept. 1659
(PRO. AO 1/1629/234, E 178/6313)
- Bridges, Brooke
auditor (with Barth. Beale), £20 p.a.
25 Dec. 1670–25 Mar. 1674
auditor (alone), £40 p.a.
25 Mar. 1674–25 Mar. 1675
auditor (with Sir Rich. Langley), £20 p.a.
25 Mar. 1675–25 Dec. 1677
auditor (with Thos Done), £20 p.a.
25 Dec. 1677–25 Dec. 1702
auditor (with Edward Harley), £20 p.a.
25 Dec. 1702–25 Dec. 1704
(PRO. AO 3/702, acc. for 1660–2; AO 1/1602/58–
1605/85)
- Briggs, Hannah
in charge of the diet, Tower, 5 Sept. 1685
5 Sept. 1685–1714 . . .
(PRO. AO 1/1604/74, AO1 1606/90–5, Mint 19/1
fo.73)
- Briot, Nicholas (*d.* 1646)
1626 appointed engraver of the royal effigy
chief engraver (not on the Establishment), Tower,
22 Jan. 1634, £50 p.a.
25 Dec. 1632–25 Dec. 1646
1631/2 and 1638/9 struck coin in the Tower
(PRO. AO 1/1598/32–1600/46, AO 1/1628/220,
223–4; NC (1913), 364, 367)
- Brough, Thomas, (*d.* 1684)
his widow claimed that he had served in the mint
near 60 years, clerk of papers, Tower, £40 p.a.
25 Dec. 1666–25 Dec. 1684
(PRO. E 351/2065–8; AO 1/1602/58–1603/65; CTB,
1685–9, 34)
- Browne,
die maker to Hen. Harris, 20s. p.wk.
1697
(BL. Additional MS 18.757 fo.40)

Brown, Robert

deputy king's clerk, Norwich, £50 p.a.

24 June 1696–24 June 1698

(PRO. E 351/2106; T1/48 no. 52)

Buckworth, Sir John

commissioner (with Chas Duncombe and Jas Hoare, sen.) to exercise the office of master-worker, 15 July 1680, £500 p.a.

22 July 1680–1684 (warrant authorising his replacement by T. Neale dated 4 Aug.)

for his connection with copper output, see below

(PRO. E 351/2092–4; *CTB*, 1681–5, 1268)

Bull, Samuel

die maker to Hen. Harris, 20s. p.wk. 1697

probationer engraver, Tower, £50 p.a. increased 24 June 1702 to £60 p.a., and from 3 Aug. 1704 to £80 p.a., when he was termed assistant to the chief engraver.

1 Jan. 1701–14. . .

(PRO. E 351/2107–20; BL. Additional MS 18,757 fo.40)

Burdikin, Thomas

deputy warden, Exeter, £120 p.a.

24 June 1696–24 June 1698

(PRO. E 351/2106)

Burgh, Nicholas, goldsmith of London

assists in sinking dies, 1626/7, during Daniel Brattle's illness

1627/8, when privy mark changed

1641/2, when mint very busy

1643/4

chief engraver, Tower, £30 p.a.

25 Dec. 1644–25 Mar. 1645

under-engraver, Tower, £40 p.a.

25 Mar. 1652–25 Mar. 1655

(GH. App. Bk.I, 163; PRO. AO 1/1597/26–7, 1599/42, 1670/499, 1600/43, 1601/51–3; *CSPD*, 1651–2, 296)

Burgh (Birch), Thomas, goldsmith of London, gent. (*d.*1661)

for his connection with an annuity as chief engraver, see John Gilbert

deputy to master-workers Sir Ralph Freeman and Sir Thomas Aylesbury down to 1642

teller and weigher, Tower, £33 6s. 8d. and £10 for his clerk p.a.

25 Dec. 1654–1661

clerk to master-worker, Tower, £20 p.a.

1 Mar. 1628–20 Apr. 1661

(GH. App. Bk.I, 163; PRO. AO 1/1599/37, 1670/499, 1601/53, 1628/220–1629/234, E 178/6313, E 351/2087; *CSPD*, 1660–1, 113, 141, 595)

Bushell, Thomas

warden and master-worker, Aberystwyth

1637–Sept. 1642, 1646, and before late Feb. 1649

warden (with Sir Wm Parkhurst), Shrewsbury

Oct. 1642–Jan. 1643

warden (with Sir Wm Parkhurst), Oxford

Jan. 1643–6

warden (with Sir Wm Parkhurst), Bristol

1643–Sept. 1645

see Edwards, John; Heckstetter, Joseph; Sydenham, John

(Boon, *passim*)

Bushell, William (uncle to Thomas)

book-keeper, Aberystwyth

(Boon, p.58)

Bynon, Henry (*d.*1673)

porter (with Evan Bynon), Tower, 19 Aug. 1662, £10 p.a. increased to £20 p.a. in 1667

1662–29 Sept. 1673

(PRO. AO 1/1601/55–1602/60; *CSPD*, 1661–2, 79, 307, 332; *CTB*, 1660–7, 455)

Calverley, Thomas

clerk to deputy comptroller, Bristol, £40 p.a.

24 June 1696–29 Sept. 1698

(PRO. E 351/2106; *CTB*, 1700–1, 253)

Carter, Richard

melter, Tower, £20 p.a.

1 Dec. 1626–25 Dec. 1631

(PRO. AO 1/1628/220)

Cartlitch, John

refiner paid piece rates by master-worker, Tower 1696–8, 1702, 1706, 1711

undertaker (with Hen. Johnson, Peter Floyer and Sir John Johnson) for taking in plate to be melted down, 1697

(PRO. E 351/2103, 2108, 2112, 2117, 2191; *CTP*, 1697–1702, 18–19)

Cartnell, Timothy

surveyor, Exeter, £50 p.a.

24 June 1696–24 June 1698

(PRO. E 351/2106)

Cary, Sir Thomas

commissioned in May 1644 to open mints in Herefordshire, Gloucestershire, Salop and Cheshire

(NC 4th ser. 13 (1913), 371)

Cherrylickhum – see Williams, John

Clarke, Thomas

deputy master-worker, Chester

1697

(PRO. E 101/305/8 no. 27)

Cogan, Henry, goldsmith of London

deputy to Comptroller Richard Rogers c.1624–36
comptroller, Tower, 26 Sept. 1627, £66 13s. 4d.,

- and £13 6s. 4d. for his clerk p.a.
29 Sept. 1636–1640
comptroller (with Wm Wheeler), Tower, 4 Feb. 1640, £66 13s. 4d., and £13 6s. 8d. for his clerk p.a. 1640–29 Sept. 1649
(GH. App. Bk.I, 197; *Foedera*, X, 244 and XX, 379;
PRO, AO 1/1599/35–42, AO 3/702, AO 1/1670/499, AO 1/1600/43, 46, 48; AO 1/1601/51; *CSPD*, 1638–9, 198)
- Collins, Henry
deputy assay-master, York, £80 p.a.
24 June 1696–24 June 1698
(PRO, E 351/2106)
- Collins, John
deputy king's clerk, Chester, £50 p.a.
24 June 1696–24 June 1698
(PRO, E 351/2106)
- Cook, Francis
deputy weigher and teller, Bristol, £50 p.a.
24 June 1696–24 June 1698
(PRO, E 351/2106)
- Cooke, William – see Coos, William
- Coombs, Richard
clerk to deputy master-worker, York, £40 p.a.
24 June 1696–29 Sept. 1698
(PRO, E 351/2106; *CTB*, 1700–1, 253)
- Coos, William
clerk to deputy assay-master, Exeter, £40 p.a.
24 June 1696–24 June 1698
(possibly the same man who was described elsewhere as William Cooke, clerk to the deputy master-worker)
(PRO, E 351/2106; T1/48 no. 52)
- Cranfield, Sir Randall (*d.* 25 Dec. 1635)
master-worker, Tower, 10 July 1623
1623–13 Jan. 1625, when his office was sequestered
(PRO, E 351/2081; *CSPD*, 1623–5, 12)
- Croker, John (1670–1741)
deputy engraver to Hen. Harris, £175 p.a.
27 Feb. 1697–1704
chief engraver, Tower, 7 Apr. 1705, £200 p.a.
3 Aug. 1704–14. . .
see Tanner
(PRO, E 351/2110–21; BL. Additional MS 18,757 fo.39r; *CTB*, 1697–8, 21; *Newton Correspondence*, IV, 350–1)
- Curtis, John
attendant at the receipt, Tower, £10 p.a.
29 Sept. 1681–24 June 1683
(PRO, E 351/2067–8)
- Curtes, William
assists in sinking dies, 1624/5, during Daniel Brattle's illness
(PRO, AO 1/1597/24)
- Dallow, Philip
porter (with Richard Dallow), Tower, 30 Sept. 1675, £20 p.a.
25 Dec. 1677–? 1708
attendant in receipt, Tower, £10 p.a.
25 Dec. 1701–? 1708 (also assisted Ric. Dallow in this capacity during the recoinage, 1696–9)
porter (alone), Tower, £20 p.a.
1 Jan. 1709–14. . .
(PRO, AO 1/1605/79, 83–AO 1/1606/95)
- Dallow, Richard (*d.* 1708)
porter (with Philip Dallow), Tower, 30 Sept. 1675, £20 p.a.
25 Dec. 1677–1708 (buried 11 Feb.)
attendant in receipt, Tower, £10 p.a.
29 Sept. 1683–25 Dec. 1701
deputy porter, Norwich £20 p.a.; deputy York, £20 p.a.; and deputy Chester, £20 p.a.
24 June 1696–24 June 1698
(PRO, AO 1/1602/62–AO 1/1605/86, E 351/2068–71, E 351/2106; Burial Register)
- Davis, Richard
deputy porter, Bristol, £20 p.a.
24 June 1696–24 June 1698
(PRO, E 351/2106)
- De Croso, Abraham
assists in engraving and sinking dies, 1641/2
(PRO, AO 1/1599/42)
- Denby, John (*d.* 1651)
porter (with Thos Knyvet), Tower, £10 p.a.
succ. Wm Ashby 1632/3 and held with Knyvet until 1635
porter (alone)
1635–24 June 1651
(PRO, AO 1/1598/31–1601/51; *CSPD*, 1651, 250; *The Knyvet Letters, 1620–1644*, edited by Bertram Schofield (Norfolk Rec. Soc. 20, 1949), p.28 and refs)
- Dicher, John, goldsmith of London
under-engraver (with John Rutlinger), Tower, £40 p.a.
25 Mar. 1606–31 Mar. 1609
under-engraver (alone), Tower, £40 p.a.
1 Apr. 1609–29 Sept. 1620
(GH. App. Bk.I, 3; PRO E 351/2030–45)
- Done, Thomas
auditor (with Brooke Bridges), £20 p.a.
25 Dec. 1677–31 Dec. 1702
(PRO, AO 1/1602/58–1605/83)

- Doubleday, Edmund (*d.* 1620)
deputy to Sir Thomas Knyvet, warden
teller, Tower, £33 6s. 8d. and £10 for his clerk p.a.
1601–25 Dec. 1609
warden (with Sir Thos Knyvet), 28 Nov. 1609, £100
and £20 for their clerk p.a.
25 Dec. 1609–25 Dec. 1620
(*BNJ* 45 (1975), 58; PRO. E 351/2030–45)
- Doyley, Thomas
clerk to the warden, Tower, employed in
discovering clippers and counterfeiters 1671–81
engineer, Tower, £100 p.a.
c. 1685–1701
for his connection with copper output, see below
(PRO. E 351/2099–2103; *CTB*, 1669–72, 952–3,
1096, 1135, 1153, 1337, 1672–5, 427, 1685–9, 47;
CSPD, 1680–1, 393, 1686–7 no. 823; *Newton Correspondence*, VII, 421)
- Duke, William
labourer in the assay house or in attendance at the
receipt, Tower, £10 p.a.
25 Dec. 1667–29 Sept. 1681
(PRO. E 351/2065–7, AO 1/1602/58–1603/65)
- Dumaresq, Henry (*d.* 1654)
teller and weigher, Tower, 30 July 1651, £33 6s. 8d.
and £10 for his clerk p.a.
29 Sept. 1649–25 Dec. 1654
(PRO. AO 1/1600/49–1601/53)
- Dumolieu, Peter
clerk in mint, 1680
(PRO. Mint 1/3 fo. 44)
- Duncombe, Charles (1648–1711)
commissioner (with Sir John Buckworth and Jas
Hoare, sen.) to exercise the office of master-
worker, 15 July 1680, £500 p.a.
22 July 1680–20 July 1686
for his connection with copper output, see below
(PRO. E 351/2092–4)
- East, John, goldsmith of London
under-engraver, Tower, 24 Jan. 1634, £40 p.a.
1 Apr. 1634–25 Mar. 1652
(*GH. App. Bk. I*, 230; PRO. AOI/1598/33–4,
AOI/1599/35–42, AOI/1670/499, AOI/1600/43, 46,
48, 49, AOI/1601/51)
- Edwards, John
deputy to Thos Bushell, Aberystwyth
Nov. 1639–Apr. 1640
(Boon, p. 57)
- Edwyn, Martin
assists in sinking dies, 1626/7, during Daniel
Brattle's illness
(PRO. AOI/1597/26)
- Ellis, Christopher
additional clerk to warden to assist in prosecuting
clippers, Tower, 1 Dec. 1696, £60 p.a.
29 Sept. 1696–25 Dec. 1699
(PRO. AOI/1605/79, 81; E351/2073; Mint 1/6 fo. 46)
- Ellis, James (*d.* 1693)
second clerk to warden, Tower, 30 Nov. 1686, £40
p.a.
24 June 1686–29 Sept. 1693
(PRO. Mint 1/5 fos 6, 25, E351/2095–2100; *CTP*,
1557–1696, 329)
- Ellis, John
comptroller, Tower, 23 May 1701, £300 + £40 for
his clerk p.a.
succ. Thos Molyneux and Chas Mason 1701–25
Dec. 1711
(PRO. AOI/1605/82–1606/92, Mint 1/5 fo. 29v; BL.
Egerton MS 929 fo. 148; *CTB*, 1711, 293)
- Elwill, Sir John
deputy master-worker, Exeter
1696–8
(*CTB*, 1697–8, 108; PRO. E351/2106)
- Evans, George (*d.* 1704)
clerk of the irons and surveyor of the meltings,
Tower, £110 and £10 for his clerk p.a., increasing to
£130 for both in 1700
Nov. 1676–1704
deputy surveyor, York, £50 p.a.
24 June 1696–24 June 1698
(PRO. AOI/1602/62–1605/85, E351/2106; *CTB*,
1676–9, 93, 365, 399, 427–8, 820)
- Evans, John
deputy surveyor of meltings, 1680
(PRO. Mint 1/3 fos 12–13)
- Evans, William (son of George)
surveyor of meltings and clerk of irons, £130 p.a.
25 Dec. 1704–14. . .
(PRO. AOI/1605/85–1606/95)
- Fauquier, John Francis (*d.* 1726)
deputy to Thos Neale and Sir Isaac Newton, master-
workers, Tower
?1686–1714. . .
(PRO. E351/2103, Mint 1/6 fo. 71v; BL. Lansdowne
MS 801 fo. 134; *Newton Correspondence, passim*)
- Fenton, Peter
clerk to Comptroller Henry Cogan, Tower, £13 6s.
8d. p.a.
1649–50
(*CJ* VI, 251–2; *CSPD*, 1650, 469)
- Fewster, William
clerk to the warden (not on the Establishment)
1643–6
(PRO. AOI/1601/51)

- Fitch, Thomas (*d.* 1701)
served for some years under the mint commissioners prior to 1686
weigher and teller, Tower, £100 p.a.
24 June 1686–1701
(PRO. AOI/1603/68–1605/82; *CTB*, 1685–9, 872)
- Fletcher, Richard
smith to Hen. Harris, 15s. p.wk, 1697
smith, Tower, £40 p.a.
1 Jan. 1712–14. . .
(PRO. E351/2118–20; BL. Additional MS 18,757 fo.40)
- Floyer, Peter, refiner of London
refiner of silver (with Thos Loveday), 1680
refiner paid piece rates by master-worker, Tower 1696
undertaker (with Hen. Johnson, John Cartlitch and Sir John Johnson) for taking in plate to be melted down, 1697
assayer and melter of clipped silver (with Chas Shales) for master-worker, Tower, 1696–8
(PRO. E351/2103–5, 2191; Mint 1/3 fo.67; *CTP*, 1697–1702, 18–19)
- Foley, Thomas
auditor (with Edward Harley), £20 p.a.
succ. Arthur Maynwaring 1712–14. . .
(PRO. AOI/1606/93–5)
- Ford, George (*d.* 2 Apr. 1713)
a 'Mr. Ford' appears as deputy warden in 1700
second clerk to the warden, £40 p.a.
17 Jan. 1708–25 Mar. 1713
(PRO. E351/2114–19, Mint 1/7 fo.15)
- Fosbrooke, Francis
deputy surveyor, Chester, £50 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Fowle, Thomas (buried 28 July 1703)
at the mint by 1680
clerk to the master-worker, Tower, £40 p.a.
30 Sept. 1689–? 1703
(PRO. E351/2098, Mint 1/3 fos 12–13; Burial Register)
- Francis, . . . ('a Frenchman')
labourer to Hen. Harris, 12s. p.wk. 1697
(BL. Additional MS 18,757 fo.40)
- Franklin, Hamond, goldsmith of London
in 1622 he claimed that he had served 20 years as a clerk in the mint without reward for his service
weigher, Tower, 24 Apr. 1624, £20 p.a.
24 Dec. 1623–29 Sept. 1649
deputy to Sir Wm Parkhurst, warden
?–24 Nov. 1642
clerk to the master-worker, Tower, £20 p.a.
- Freeman, Sir Ralph (*d.* 1667)
auditor (with Hen. Stanley), £20 p.a.
24 June 1628–25 Dec. 1631
commissioner (with Sir Thos Aylesbury) for the master-worker, Tower, 3 Aug. 1635, £500 p.a.
3 Aug. 1635–5 May 1643
master-worker, Tower, 9 July 1660, £500 p.a.
21 July 1660–30 Dec. 1662
master-worker (with Hen. Slingsby), Tower, 30 Dec. 1662, £500 p.a.
30 Dec. 1662–1667
(PRO. E351/2053, AOI/1598/28–30, AOI/1628/221–1629/228, E351/2087; BL. Additional MS 34, 358 fo.23; *CSPD*, 1667, 175)
- Freeman, Thomas
moulder in the melting house, 1680
(PRO. Mint 1/3 fo.47)
- Frowde, Corney (*d.* 1680)
assistant to weigher and teller, Tower, £40 p.a.
25 Dec. 1677–24 June 1679
clerk to the master-worker
1 June 1680–22 July 1680
chief clerk, Tower, £60 p.a.
24 June 1679–29 Sept. 1680
(PRO. AOI/1602/63, 65; E112/588 no.8)
- Gardener, Thomas
doorkeeper, employed by Floyer and Shales at the Exchequer
1697
(PRO. E101/620/64 no.14)
- Gardiner, Francis, alderman of Norwich
deputy master-worker, Norwich
1696–8
(*CTB*, 1697–8, 108; PRO. E351/2106)
- Gilbert, John
formerly warden of the mint in Scotland
chief engraver, Tower, £30 p.a., 15 Sept. 1624
(with Edward Green) 24 June 1624–31 Mar. 1626
on 13 Nov. 1628 Gilbert was granted an annuity of £50 for life as chief engraver of the mint (though Green remained in sole control), and he drew this sum for ten years to 24 June 1638 when he surrendered his patent to Thomas Burgh. In turn, Burgh surrendered the patent for an annuity of £50
(*CSPD*, 1623–5, 340; PRO. AOI/1597/24, 26, 37; *Select Tracts and Documents illustrative of English Monetary History, 1626–1730*, edited by W.A. Shaw (London, 1896), p.5)
- Gisborne, Henry – see Mattis

- Goodyear (Goodere), Edward
comptroller, Aberystwyth, 30 July 1637, £40 p.a.
1637
(Boon, p.57)
- Goston (Gofton), Sir Francis
auditor (with Alex. King), £20 p.a.
29 Sept. 1603–24 Dec. 1618
auditor (alone)
25 Dec. 1618–31 Mar. 1619
auditor (with Hen. Stanley)
1 Apr. 1619–24 June 1628
(*CSPD*, 1603–10, 33; PRO. E351/2043–53)
- Granger, Benjamin
clerk to deputy comptroller, Exeter, £40 p.a.
24 June 1696–24 June 1698
(PRO. E351/2106)
- Green, Charles, goldsmith of London (brother of Edward)
under-engraver, Tower, 28 Mar. 1616, £40 p.a.
29 Sept. 1620–31 Mar. 1634
(GH. App. Bk. I, 104; *CSPD*, 1611–18, 358; PRO. E351/2045–7, AOI/1597/23–7, E351/2053, AOI/1598/28–32)
- Green, Edward, goldsmith of London (*d.*1644)
chief engraver, Tower, £30 p.a. 15 Sept. 1634
(with John Gilbert) 24 June 1624–31 Mar. 1626
(alone) 1 Apr. 1626–25 Dec. 1644 (see John Gilbert)
(GH. App. Bk. I, 165; *CSPD*, 1623–5, 340; PRO. AOI/1597/24–7, E351/2053, AOI/1598/28–34, AOI/1599/35–42, AOI/1670/499)
- Greenall, William
clerk to deputy comptroller, Chester, £40 p.a.
24 June 1696–24 June 1698
(PRO. E351/2106)
- Grillet, John
probationer engraver, Tower, £50
25 Dec. 1697–29 Sept. 1698
(PRO. E351/2103; *CTB*, 1697–8, 63)
- Grime, Walter
clerk to Warden St John, Tower, £20 p.a.
1649
(*CJ* VI, 251–2, PRO. C54/3487)
- Grochy, Giles
clerk to master-worker,
June 1652–Nov. 1653
(PRO. AOI/1629/234, E178/6313)
- Guerdain, Aaron, MD (*d.*1676)
master-worker, Tower, 26 July 1649, £400 p.a.
16 May 1649–31 May 1660
(PRO. AOI/1629/234, E178/6313; G.R. Balleine, *A Biographical Dictionary of Jersey*, (1948))
- Hall, Thomas
chief clerk, Tower, £60 p.a.
29 Sept. 1682–1714. . . .
clerk of papers, Tower, £40 p.a.
24 Dec. 1684–1714. . . .
assistant to the master-worker during the recoinage,
£600 p.a. for him and his clerks
25 Dec. 1695–25 Dec. 1697
(PRO. E351/2068–71, AOI/1603/68–1606/95, E351/2103)
- Halley, Edmund (1656–1742)
deputy comptroller, Chester, £100 p.a.
24 June 1696–24 June 1698
(PRO. E351/2106; *DNB*)
- Hanslopp, Charles
surveyor of the sweep, Tower, £50 p.a.
25 Mar. 1696–29 Sept. 1698
(PRO. E351/2103)
- Harley (Harleigh), Edward (*d.*1680)
in charge of the diet, Tower
succ. Ric. Millard in 1622–1680
(PRO. Mint 19/1 fos 61, 40)
- Harley, Edward
auditor (with Brooke Bridges), £20 p.a.
1 Jan. 1703–? 1705
auditor (with Arth. Maynwaring), £20 p.a.
25 Dec. 1705–12
auditor (with Thos Foley), £20 p.a.
1712–14. . . .
(PRO. AOI/1605/84–1606/95)
- Harley, Frances
in charge of the diet, Tower
succ. her husband 23 Oct. 1680–5
(PRO. Mint 19/1 fo. 40)
- Harley, Sir Robert (1579–1656)
master-worker, Tower, 6 Sept. 1626, £500 p.a.
27 Nov. 1626–1 Aug. 1635
reappointed by ordinance of parliament, 6 May
1643–15 May 1649
(*CSPD*, 1625–6, 573, 577; PRO. E101/305/7 no.16, AOI/1628/220, AOI/1629/30 and 32; *DNB*)
- Harris, Henry
chief engraver, Tower, 4 Apr. 1690, £325 p.a.
25 Mar. 1690–31 Aug. 1704
see Bull, Sam.; Browne, –; King, –; Francis, –;
Williams, –; Fletcher, Ric.; Stafford
for his connection with tin output, see below
(PRO. Mint 1/5 fo.22, E351/2098–2110)
- Hartnoll, Thomas
deputy surveyor, Exeter, £50 p.a.
1696–8
(PRO. T1/48 no.52)

- Hartstongue, Robert
deputy assay-master, Norwich, £80 p.a.
24 June 1696–24 June 1698
(PRO.E351/2106)
- Hawkes, Thomas
clerk, Exeter
c.Sept. 1643–c.Apr. 1646
(NC 5th ser. 8 (1928), 227)
- Hayes, Israel (d.1701)
deputy comptroller, Exeter, £100 p.a.
24 June 1696–24 June 1698
(PRO. E351/2106)
- Haynes, Hopton (d.1749)
In 1701 Newton said that apart from two brief intervals Haynes had served in the mint for fourteen years. During the Great Recoinage he was employed to instruct officers for the country mints and to supervise their accounts; recommended as suitable for post of deputy comptroller during recoinage, passed over in favour of Francis Beresford but took care of comptroller's office 'till Mr Beresford could qualify himself'; retained as clerk to master-worker at £100 p.a. till Neale's death weigher and teller, Tower. 27 Nov. 1701. £100 p.a. succ. Thos. Fitch in 1701–14. . .
(PRO.AOI/1605/82–1606/95, Mint 1/5 fo.30; DNB; *Newton Correspondence*, IV, 375)
- Hechstetter, Joseph
deputy to Thos Bushell, Aberystwyth
1 May 1640–Apr. 1642
(Boon, p.58)
- Herbert, lord Edward
commissioned in July 1644 to strike money as usually current in the king's dominions
(NC 4th ser. 13 (1913), 371)
- Higginson, Nathaniel (1652–1708)
clerk to assist Wardens Wharton in prosecutions 1681–3
(*Dictionary of American Biography*)
- Hill, –
under-graver, Tower
1662
(CSPD, 1661–2, 586)
- Hill, Henry
assists in sinking dies,
1626/7, during Daniel Brattle's illness
1627/8, when privy mark changed
(PRO.AOI/1597/26–7)
- Hoare, Henry (grandson of Jas Hoare, sen.)
appointed assistant to his grandfather, 8 July 1695, without salary
(CTB, 1693–6, 1391; 1696–7, 27, 40, 45, 149)
- Hoare, James (sen.) (d.1696)
clerk to master-worker, Tower, £20 p.a.
1 May 1637–31 May 1660
clerk, Tower, £20 p.a.
1 Apr. 1637–25 Mar. 1655
comptroller (alone), Tower, £80 p.a.,
June 1660–May 1662
comptroller (with his son, James), Tower, £80 p.a.,
increased to £340 p.a. from 1667
May 1662–24 June 1679
comptroller (alone), Tower, £340 p.a.
24 June 1679–25 Mar. 1696
commissioner (with Chas Duncombe and Sir John Buckworth) to exercise the office of master-worker, 15 July 1680, £500 p.a.
22 July 1680–20 July 1686
for his connection with copper output, see below
(CSPD, 1660–1, 74; PRO.AOI/1599/36–1601/53; 1601/55–1604/77, E351/2072, AOI/1628/222–1629/234, E178/6313, E351/2092–4)
- Hoare, James (jun.) (d.1679)
clerk to the master-worker, £20 p.a.
21 July 1660–78
clerk, Tower, £20 p.a. made chief clerk in 1667 at £60 p.a.
25 Dec. 1662–24 June 1679
joined with his father, James, as comptroller by grant 2 May 1662
for his connection with copper output, see below
(PRO.AOI/1601/55–1602/63, E351/2087, E112/588 no.8; CSPD, 1661–2, 358)
- Hoare, Martin (son of James, sen.) (d.1682)
chief clerk, Tower, £60 p.a.
29 Sept. 1680–29 Sept. 1682
(PRO.AOI/1603/65, 67; *New History of the Royal Mint*; Burial Register)
- Hodgkins, Thomas
smith, Tower, paid £10 p.a. on the Establishment and piece rates by master-worker
29 Sept. 1644–25 Dec. 1673
(PRO.AOI/1670/499, 1600/43–1602/60, 1629/230; CSPD, 1661–2, 344)
- Holland, Cornelius
collector and receiver of coinage money, app. by parliament 24 Nov. 1642, £100 and £20 for his clerk p.a.
29 Sept. 1642–12 May 1645
(PRO.AOI/1670/499, 1600/43)
- Holle, William (d.1624), goldsmith of London
chief engraver, Tower, 29 May 1618, £30 p.a.
1 Apr. 1618–24 June 1624
(GH,0,545; PRO.E351/2043–47, AOI/1597/23–24)
- How, Alexander
deputy master-worker, Bristol
?1696–8

- (see Yates, Robert, who appears to have succ. him)
(*CTB*, 1697-8, 103; PRO.E101/305/8 no.43)
- Howard, James (possibly a scribal error for Hoare)
clerk, Tower, £20 p.a.
1649
(*CJ* VI, 251-2; PRO. C54/3487)
- Hull, Richard, of London, gent.
surveyor of meltings and clerk of irons,
Aberystwyth, 30 July 1637, £40 p.a., 1637
(Boon, p.57)
- Hunter, James
assistant to the Roettiers, Tower, before 1695
(*BNJ* 27 (1952-4), 206-7)
- Ireland, Edward, goldsmith of London
smith, Tower, paid piece rates by master-worker
1638-49
(*GH.App.Bk.1*, 217; PRO.AOI/1628/224-1629/
232)
- Johnson, Henry
undertaker (with Sir John Johnson, Peter Floyer
and John Cartlitch) for taking in plate to be melted
down, 1697
(PRO.E351/2191; *CTP*, 1697-1702, 18-19)
- Johnson, Sir John, goldsmith of London
undertaker (with Hen. Johnson, Peter Floyer, and
John Cartlitch) for taking in plate to be melted
down, 1697
(PRO.E351/2103 and 2191; *CTP*, 1697-1702,
18-19)
- Johnson (Jansen), Peter (buried 13 Jan. 1698)
smith to the Roettiers and subsequent engravers,
Tower, £50 p.a.
1662 - died in office 1698
for his connection with copper output, see below
(PRO. E351/2090, 2103, AOI/1631/244, AO3/702;
CTB, 1697-8, 239; Burial Register)
- King, -
letter maker for Hen. Harris, 20s. p.wk
1697
(BL. Additional MS 18.757 fo.40)
- King, Alexander (*d.*1618)
auditor (alone), £20 p.a.
25 Mar. 1596-29 Sept. 1603
auditor (joined with Fra. Goston by Establishment
of 30 Aug. 1603)
29 Sept. 1603-25 Dec. 1618
(*BNJ* 45 (1975), 62; PRO.E351/2030-43, E101/307/
2 no.1)
- Kynvet, Anthony
teller, Tower, 11 Dec. 1609, £33 6s. 8d. and £10 for
his clerk p.a.
25 Dec. 1609-29 Sept. 1649
porter, Tower, £10 p.a.
1 Apr. 1612-31 Mar. 1617
porter (with Edm. Kynvet), Tower, £10 p.a.
1 Apr. 1617-31 Mar. 1619
(PRO.E351/2034-47, AOI/1597/23-1601/51;
CSPD, 1603-10, 571)
- Kynvet, Edmund (*d.*1629/30)
porter (with Ant. Kynvet), Tower, £10 p.a.
1 Apr. 1617-31 Mar. 1619
porter (alone), Tower, £10 p.a.
1 Apr. 1619-1629/30 when succ. by Thos Kynvet
and Wm Ashby
(PRO. E351/2042-7, AOI/1597/23-1598/28)
- Kynvet, Thomas, lord Kynvet of Escrick (*d.*1622)
warden, Tower, 28 Sept. 1599, £100 and £20 for his
clerk p.a.
1 Oct. 1599-25 Dec. 1609
warden, (with Edw. Doubleday), Tower, 28 Nov.
1609, £100 and £20 p.a. for their clerk
25 Dec. 1609-4 Feb. 1621
(*BNJ* 45 (1975), 63; *CSPD*, 1603-10, 563; PRO.
E351/2030-45; P. Hasler, *The House of Commons*,
1558-1603 (1981), II, 423-4)
- Kynvet, Thomas
purveyor, Tower, £20 p.a.
1600-24 June 1603
(*BNJ* 45 (1975), 63; PRO.E351/2030)
- Kynvet, Thomas (1596-1658), nephew of Edmund
porter, Tower, £10 p.a.
succ. Edmund Kynvet 1629/30 and held jointly with
(1) Wm Ashby until Ashby's death, 1632/3; and (2)
John Denby until 1635
(*The Kynvet Letters, 1620-1644*, edited by Bertram
Schofield (Norfolk Rec. Soc. 20, 1949), p.28 and
refs)
- Lamb, William
deputy comptroller, Norwich, £100 p.a.
24 June 1696-24 June 1698
(PRO. E351/2106)
- Langley, Sir Richard
auditor, £20 p.a.
25 Mar. 1675-25 Dec. 1677
(PRO. E351/2066)
- Lawrence, Jonas
assists in sinking dies, 1636/7
(PRO. AO 1/1599/35)
- Le Blanc, William (buried 22 July 1676)
working for the master-worker in some unspecified
capacity, 1663-6
assistant to weigher and teller, Tower £40 p.a.
25 Dec. 1666-1676
for his connection with copper output, see below

- (PRO. E 351/2065-6, AO 1/1602/58-60; *HMC 6th Report*, p.333; Burial Register)
- Le Clerc, Gabriel
assistant to chief engraver, Tower, £80 p.a.
1 Jan. 1705-29 Sept. 1706 (absent abroad 29 Sept. 1706-25 Dec. 1707)
25 Dec. 1707-25 Mar. 1709
(PRO. E 351/2111, 2112, 2114, 2115)
- Leeke, Ralph, of London
melter, Bristol
1696-8
(PRO. E 351/2108; Mint 1/8 fo.21)
- Lewis, Edward
clerk to deputy comptroller, Chester £40 p.a.
1696
but see T. Neale's acc, PRO. E351/2106, which gives this post to Wm Greenall; presumably, the latter succ. Lewis when Lewis became clerk to deputy master-worker, Chester
dismissed Feb. 1698
(*CTB*, 1697-8, 28, 59-60, 148, 156, 238; PRO. T1/48 no.52)
- Lincoln, Richard
purveyor, Tower, £16 p.a.
1 May 1644-1659
(PRO. AO 1/1629/230, 232, 234, E 178/6313)
- Lincoln, Savory
purveyor, Tower, £16 p.a.
21 July 1660-31 Dec. 1662
(PRO. E 351/2087)
- Lloyd, John
deputy surveyor, Bristol, £50 p.a.
24 June 1696-24 June 1698
(PRO. E 351/2106)
- Lloyd, Sir Philip (*d.* 29 Sept. 1686)
warden, Tower, 4 Mar. 1685, £440 p.a.
23 Feb. 1685-29 Sept. 1686
(PRO. AO 1/1603/68; *CTB*, 1685-9, 1512)
- Loup (Loope), William
clerk to deputy master-worker, Bristol, £40 p.a.
24 June 1696-24 June 1698
(PRO. E351/2106)
- Loveday, Thomas
refiner of silver (with Peter Floyer),
1680
(PRO. Mint 1/3 fo.67)
- Low, Samuel
deputy engraver, Tower
worked under the Roettiers
(*CTB*, 1709, 162)
- Lowe, John
deputy engraver, Bristol, £40 p.a.
24 June 1696-24 June 1698
(PRO. E 351/2106)
- Macy (Macey), George
clerk to Wardens Wharton, Lloyd, Wynne and Overton, prosecuting clippers and coiners,
?1680-94
chief clerk or deputy to warden (Benj. Overton),
Tower, 1693-6
deputy to Isaac Newton, 1696-9
see also Predditt, Christopher
(*CTB*, 1689-92, 1418, 1693-6, 929-30, 990, 1141;
PRO. E 351/2072-3; *CTP*, 1557-1696, 285)
- Manwaring, James
deputy master-worker, Chester
1697-8
(*CTB*, 1697-8, 108)
- Marshall, Henry
clerk to deputy warden, York, £40 p.a.
24 June 1696-24 June 1698
(PRO. E 351/2106)
- Martin, John
smith, Tower, £10 p.a.
succ. Lewis Tayte in 1641/2-29 Sept. 1644
(PRO. AO 1/1599/42; 1670/499)
- Martin, Sir Richard (1534-1617), goldsmith of London
master-worker (with his son, Richard), Tower, 28 Sept. 1598
29 Sept. 1598-Feb. 1607
master-worker, Tower
Feb. 1607-July 1617
(*BNJ* 45 (1975), 64; BL. Additional MS 18,758 fo.179; PRO. E101/296/14-16, E159/443 Rec. Mic. 252)
- Martin, Richard (*d.* 1616), goldsmith of London
master-worker (with his father, Sir Richard),
Tower, 28 Sept. 1598
29 Sept. 1598-Feb. 1607
(*BNJ* 45 (1975), 64; BL. Additional MS 18,758 fo.179; PRO. E101/296/16, E159/443 Rec. Mic. 252)
- Martin, Richard
smith, Tower, paid piece rates by master-worker
1637-30 Nov. 1644
(PRO. AO 1/1628/223-1629/230)
- Mason, Charles
comptroller (with Thos Molyneux), Tower, 27 Jan. 1697, £340 p.a.
25 Mar. 1696 - succ. by John Ellis, 1701
(PRO. AO 1/1605/79, 81-2; *CTP*, 1697-1702, 425)
- Mason, Matthew, goldsmith of London (aged 58 in 1664, *d.* 1668)

- melter, Tower, paid by master-worker
21 July 1660–20 June 1668
(PRO. E 351/2089, E 178/6313; *CTB*, 1660–7, 535;
HMC 6th Report, p.332b)
- Mason, Thomas
smith, Tower, paid piece rates by master-worker
1635–43
(PRO. AO 1/1628/221–1629/228)
- Matthews, Richard
purveyor, Tower, £16 p.a.
June 1650–30 Nov. 1657
porter, Tower, £10 p.a.
24 June 1651–25 Mar. 1655
attendant in receipt, Tower, 53s. 4d. p.a.
24 June 1651–29 Sept. 1654
(PRO. AO1/1601/51, 53; AO1/1629/234; E178/
6313)
- Mattis (alias Gisborne), Henry
smith, Tower, £10 p.a.
1596–4 July 1623
(*BNJ* 45 (1975), 64; PRO. E 351/2030–47)
- Maynwaring, Arthur (d.1712)
auditor (with Edw. Harley), £20 p.a.
25 Dec. 1705–1712, when succ. by Thos Foley
(PRO. AO1/1605/87–1606/93)
- Maysmor, Robert
clerk to the master-worker, Tower, £40 p.a.
30 Sept. 1698–?
(PRO. E351/2098)
- Meeres, Robert (d.1637)
book-keeper, Tower, £20 p.a.
1594–31 Mar. 1637
clerk to the master-worker, Tower, £20 p.a.
27 Nov. 1626–30 Apr. 1637
(*BNJ* 45 (1975), 64; PRO. E 351/2030–47, AO
1/1597/23–1599/35; AO 1/1628/220–2)
- Meynell, Francis
receiver (with Sir Thos Vyner and Edw. Backwell)
of the 'harp and cross' money demonetised in 1661
(*New History of the Royal Mint*, chap. 3)
- Millard, Richard
in charge of the diet, Tower
before 1622
(PRO. Mint 19/1 fo.61)
- Milward, Richard
book-keeper, Tower, £20 p.a.
1591–31 Mar. 1616
(*BNJ* 45 (1975), 64; PRO. E 351/2030–40)
- Molyneux, Thomas
comptroller (with Charles Mason), 27 Jan. 1697,
£340 p.a.
- 25 Mar. 1696–succ. by John Ellis, 1701
(PRO. Mint 1/5 fo.26; AO 1/1605/79, 81–2; *CTP*,
1697–1702, 425)
- Monlowe, Anthony
described as an 'officer' of the mint in 1626
(*APC*, 1626, 359)
- Moor, John
clerk to deputy warden, Exeter, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Moor, Thomas
deputy warden, Norwich, £120 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- More, Robert
described as an 'officer' of the mint in 1626
(*APC*, 1626, 359)
- Morgan, Richard
clerk to master-worker, Tower
1707, at which date it was proposed that he go to
instruct in book-keeping at the Edinburgh mint
during the Scottish recoinage
poss. clerk to the warden, Tower
1713–14. . .
(*CTP*, 1702–7, 519; PRO. AO1/1606/94–5; *CTB*,
1706–7, 354)
- Morgan, Eymon
labourer in assay house (not on the Establishment),
£10 p.a.
25 Dec. 1666–25 Dec. 1670
(PRO. E 351/2065)
- Morley, Richard
clerk to warden, Chester, £40 p.a.
24 June 1696–29 Sept. 1698
(PRO. E 351/2106; *CTB*, 1700–1, 253)
- Morrice, John
clerk, Tower, before 1670
(*CSPD*, 1670, 623)
- Neale, Thomas (d.16 Dec. 1699)
commissioner (with Chas Duncombe and Jas
Hoare, sen.) to exercise office of master-worker
4 Aug. 1684–20 July 1686
master-worker, Tower, 7 Aug. 1678, £500 p.a.
22 July 1686–23 Dec. 1699
for his connection with copper output, see below
(PRO. E 351/2095–2106; *CTB*, 1681–85, 1268, 1702,
165)
- Newton, Sir Isaac (1642–1727)
warden, Tower, 13 Apr. 1696, £440 p.a.
25 Mar. 1696–25 Dec. 1699
master-worker, Tower, 3 Feb. 1700, £500 p.a.

- 1 Jan. 1700–31 Dec. 1726
(PRO. AO 1/1605/79, Mint 1/5 fo.26; E 351/2107–21; AO 1/1635/278–1637/289)
- Oldfield, Thomas
smith, Tower, paid piece rates by master-worker
1629–38
(PRO. AO 1/1628/220–3)
- Oliver, Samuel
clerk to deputy comptroller, Norwich, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Overton, Benjamin
warden, Tower, 2 Feb. 1690, £440 p.a.
1 Feb. 1690–25 Mar. 1696
(PRO. AO 1/1604/74–7; E 351/2072)
- Owen, Humfrey, of Aberystwyth, gent.
clerk, Aberystwyth, 30 July 1637, £15 p.a.
1637
(Boon, p.57)
- Palmer, Andrew
assay-master (with Walt. Williams), Tower, £66 13s.
4d. and £10 for his clerk p.a.
25 Mar. 1605–25 Mar. 1620
assay-master (alone), Tower
25 Mar. 1620–25 Mar. 1622
assay-master (with Geo. Turner)
25 Mar. 1622–25 Mar. 1634
assay-master (alone)
25 Mar. 1634–29 Sept. 1649
sequestrator (with Sir Wm Parkhurst and Ric.
Rogers) for Sir Randall Cranfield's office of master-
worker
13 Jan. 1625–14 Aug. 1626
(PRO. E 351/2031–47; AO 1/1597/23–1601/51; E
351/2081)
- Palmer, William
clerk to the warden (not on the Establishment)
1652–3
(PRO. AO 1/1601/51; CSPD, 1652–3, 69–70)
- Parker, Peter
assists in sinking dies, 1624/5, during Daniel Bratt-
le's illness
(PRO. AO 1/1597/24)
- Parkhurst, Sir William (buried 28 Feb. 1667)
sequestrator (with Ric. Rogers and And. Palmer)
for Sir Randall Cranfield's office of master-worker,
13 Jan. 1625–14 Aug. 1626
warden (with Sir Edw. Villiers), Tower, 12 July
1623, £100 and £20 for their clerk p.a.
17 July 1623–1 Sept. 1626
warden (alone)
1 Sept. 1626–25 Mar. 1629
warden (with Sir Anthony St Leger), 11 Feb. 1629
- 25 Mar. 1629–24 Nov. 1642
16 Apr. 1660–19 Dec. 1666
warden (with Thos Bushell), Shrewsbury, Oxford,
Bristol
1642–6
(PRO. E351/2081, AO1/1597/23–7, E351/2053,
AO1/1598/28–1599/42, AO3/702, AO1/1601/55;
CTB, 1660–7, 652; LJ XII, 37; Burial Register)
- Parsons, John
clerk to Master-Worker Neale
?1696–9
(BL. Landsdowne MS 801 fo.134)
- Pemberton, Peter
deputy assay-master, Chester, £80 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Pendleton, Thomas
clerk in mint 1698
for his connection with copper output, see below
- Penrose, Thomas
deputy weigher and teller, York, £50 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Perrot, Lancelot
weigher and teller, Tower, £90 p.a., raised to £100
p.a. on death of Thos Rawlins
25 Dec. 1666–24 June 1686
(CSPD, 1665–6, 373; PRO. E 351/2065; AO 1/1602/
58–1603/68)
- Peyton, Craven
warden, Tower, 1 May 1708, £400 + £40 for his
clerk p.a.
1 May 1708–31 Dec. 1714
(PRO. Mint 1/5 fo.36v, AO1/1605/89–1606/95)
- Phelipps, Edward
comptroller, Tower, 11 June 1711, £300 + £40 for
his clerk p.a.
25 Dec. 1711–31 Dec. 1714
(PRO. AO1/1606/93–5, Mint 1/5 fo.37r; BL. Eger-
ton MS 929 fo.148)
- Phocus, Lancelot
deputy engraver, Chester, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106; TI/48 no.52)
- Pight, Richard (born c.1608)
clerk of the irons and surveyor of the meltings,
Tower, 7 Aug. 1649, £40 p.a. and £10 for his clerk
p.a.
29 Sept. 1649–1660
(PRO. AO 1/1600/49–1601/53; E 178/6313. See also
E 178/6589, CSPD, 1660–1, 10, 136; CSPD, 1651,
389; CTB, 1660–7, 491, 587)

- Porter, Thomas
clerk to the master-worker, Tower, £40 p.a.
30 Sept. 1689–? (described as 'late one of the clerks'
in 1702)
(PRO. E351/2098; AO1/1605/83)
- Predditt, Christopher, of St Leonard's, Shoreditch
(Middx)
deputy to Isaac Newton
1696–9
see also Macy, George
(PRO. E 351/2073; *Newton Correspondence*, IV,
220)
- Preston, Abraham
assists in engraving and sinking dies, 1641/2 and
1642/3
(PRO. AO 1/1599/42; AO 1/1670/499)
- Raper, Christopher
deputy weigher and teller, Norwich, £50 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Rawlins, Thomas (born c.1620, d.1670)? goldsmith of
London
chief engraver, Tower and elsewhere in England
and Wales (in effect at Oxford), 7 May 1645, £30
p.a.
chief engraver, Tower, £30 p.a.
25 Dec. 1662–25 Mar. 1670
(PRO. AO1/1601/55, E351/2065; M. Corbett and
M. Norton, *Engraving in England. Part III. The
Reign of Charles I* (Cambridge, 1964), p.273; *NC*
4th ser., 13 (1913), 368–70)
- Rayners, Robert
weigher, employed by Floyer and Shales at the
Exchequer 1697
(PRO. E101/620/64 no.14)
- Redhead, Anthony, pewterer of London
deputy master-worker, Norwich
1696–8
(PRO. E351/2109; Mint 1/8 fo.33; *CTP*, 1702–7,
103, 143, 228, 279, 311)
- Rennish, Samuel, of London, gent
assay-master, Aberystwyth, 30 July 1637, £40 p.a.
1637–?42
see Barsbee, Walter
(Boon, p.57)
- Reynell, Thomas
deputy king's clerk, Exeter, £50 p.a.
24 June 1696–29 Sept. 1698
(PRO. E 351/2106; *CTB*, 1700–1, 253)
- Reynolds, Jeremy
assistant to the assay-master (with his brother,
John), 3 Mar. 1615, £40 p.a.
1 Apr. 1615–25 Mar. 1630
(PRO. E351/2040–53, AO1/1597/23–8, C66/2023
m.20; *CSPD*, 1603–10, 373, 560)
- Reynolds, John, goldsmith of London (d.1666)
assistant to the assay-master, Tower, 6 Oct. 1607,
£40 p.a.
24 June 1607–31 Mar. 1615
assistant to the assay-master (with his brother,
Jeremy), 3 Mar. 1615, £40 p.a.
1 Apr. 1615–25 Mar. 1630
assistant to the assay-master (alone), sometimes
referred to as deputy assay-master
25 Mar. 1630–29 Sept. 1665
clerk, Tower, £20 p.a.
1 Apr. 1616–24 June 1665
clerk to the master-worker, Tower, £20 p.a.
27 Nov. 1626–30 Nov. 1632 and 3 Aug. 1635–31
Dec. 1662
(PRO. E 351/2032–53, AO1/1597/23–1601/55, C66/
2023 m.20, E 351/2087, AO1/1628/220–1629/234, E
178/6313; *CSPD*, 1603–10, 373, 560, 1649–50, 475;
GH. App. Bk.I, 127; *HMC 6th Report*, 338b)
- Rivett, Thomas (buried 29 Oct. 1713)
assistant to the assay-master, Tower
30 Sept. 1687–1713
(PRO. E351/2096; Burial Register)
- Robinson, –
melter and refiner, Chester
(*CTB*, 1697, 271)
- Robinson, Edward, vintner of London
melter, 4 Sept. 1680–24 Nov. 1681
(PRO. Mint 1/3 fos 69, 74, 85)
- Robinson, Francis
deputy porter, Exeter, £20 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Robinson, Richard
clerk to deputy comptroller, York, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Roettier, James (son of John) d.1698
worked with his brother, Norbert, discharging (1)
his father's office in the years immediately preced-
ing the latter's retirement (2) Hen. Harris's office,
1690–5
discharged Hen. Harris's office (alone) 1695–Feb.
1697, £175 p.a.
for his connection with tin output, see below
(Forrer, V, 156; *CTP*, 1557–1696, 53; *CTB*,
1697–8, 21; *New History of the Royal Mint*, chap. 3)
- Roettier, John (1631–1703)
chief engraver (with his brothers, Joseph and
Philip), £325 p.a.

- May 1662–c.Feb. 1679
chief engraver (with brother, Philip), £325 p.a.
c.Feb. 1679–c.Feb. 1685
chief engraver (alone), £325, c.Feb. 1685–30 Sept. 1689
for his connection with copper output, see below
(*CSPD*, 1661–2, 378; *New History of the Royal Mint*, chap. 3; Forrer, V, 161–3)
- Roettier, Joseph (1635–1703)
chief engraver (with his brothers, John and Philip), £325 p.a.
May 1662–c.Feb. 1679
for his connection with copper output, see below
(*CSPD*, 1661–2, 378; *New History of the Royal Mint*, chap. 3; Forrer, V, 174)
- Roettier, Norbert (son of John) d. 1727
worked with his brother, James, discharging (1) his father's office in the years immediately preceding the latter's retirement (2) Hen. Harris's office, 1690–5
(Forrer, V, 183; *CTP*, 1557–1696, 53; *New History of the Royal Mint*, chap. 3)
- Roettier, Philip (1640–1718)
chief engraver (with his brothers, John and Joseph), £325 p.a.
May 1662–c.Feb. 1679
chief engraver (with brother, John), £325 p.a.
c.Feb. 1679–c.Feb. 1685
for his connection with copper output, see below
(*CSPD*, 1661–2, 378; *New History of the Royal Mint*, chap. 3; Forrer, V, 187)
- Rogers, Richard, goldsmith of London
comptroller, Tower, £66 13s. 4d. and £13 6s. 8d. for his clerk p.a.
18 Sept. 1599–29 Sept. 1636
sequestrator (with Sir Wm Parkhurst and And. Palmer) for Sir Randall Cranfield's office of master-worker, 13 Jan. 1625–14 Aug. 1626
for a possible associate in the comptroller's office, see Wm Wood; for his deputy, see Hen. Cogan
(*BNJ* 45 (1975), 67; *PRO*, E 351/2030–47, AO1/1597/23–1599/35, E 351/2081)
- Rowe, John
clerk to deputy warden, Bristol £40 p.a.
24 June 1696–24 June 1698
(*PRO*, E 351/2106)
- Rowland, Peter
melter, Tower, £16 p.a.
1 Jan. 1632–31 July 1636
purveyor and under-melter, Tower
1 Aug. 1636–30 Apr. 1644
(*PRO*, AO1/1628/220–1629/230, E 189/4/4)
- Runham, Edward
clerk to Sir Thomas Knyvet, warden, Tower, £20 p.a.
1603
(*PRO*, E101/307/2 no.1)
- Rutlinger, John (d. 1609)
under-engraver, Tower, £20 then £40 p.a.
1596–25 Mar. 1603 (between then and Nov. 1604, when Van Landen was appointed, the office was discharged by Charles Anthony, the reason being that despite Rutlinger being named in the Establishment of 30 Aug. 1603 'he wilfully absented himself' from the mint)
under-engraver, (with John Dicher), £40 p.a.
25 Mar. 1606–31 Mar. 1609
(*PRO*, E 351/2030–3, E 101/307/2 no.1, SP 14/5 no.26; *BNJ* 45 (1975), 67)
- St John, John (d. 1660)
warden, Tower, £100 and £20 for his clerk p.a.
24 June 1645–1660
(*PRO*, AO 1/1600/43; *CTB*, 1660–7, 2)
- St Leger, Anthony (d. 1685) son of Sir Anthony
deputy warden
1677–80
(*HMC* 79 Lindsey MSS. p.166; *PRO*, Mint 1/3 fo.12)
- St Leger, Sir Anthony (d. 1680)
warden (with Sir Wm Parkhurst), Tower, 11 Feb. 1629
25 Mar. 1629–24 Nov. 1642
16 Apr. 1660–19 Dec. 1666
warden (alone)
20 Dec. 1666–25 Dec. 1680
(*PRO*, AO 1/1598/28–1599/42; AO 3/702; AO 1/1601/55–1603/65; *CTB*, 1660–7, 652)
- Scott, William
like Barth. Beale, he was an auditor of the prests and was listed as an auditor of the mint in a report of ? 1652; there is no evidence in the accounts of his being paid.
(*CSPD*, 1651–2, 226; 1652–3, 69–70, 553)
- Segar, Henry
assistant to weigher and teller, Tower, £40 p.a.
25 Mar. 1686–1714.
(*PRO*, AO1/1603/68–1606/95)
- Shales, Charles, goldsmith of London
assayer and melter of clipped silver (with Peter Floyer) for master-worker, Tower
1696–8
(*PRO*, E 351/2104–5)
- Shales, Philip
melter to Sir Isaac Newton
1702
(*PRO*, Mint 19/1 fo.202)

- Shenton, George
weigher, employed by Floyer and Shales at the
Exchequer
1697
(PRO. E 101/620/64 no.14)
- Shenton, William
melter 1677–Aug. 80
(HMC 79 Lindsey MSS, p.170; PRO. Mint 1/3 fos
32, 69)
- Sheppard, Samuel
deputy to Master-Worker Neale
1696
(PRO. Mint 1/6 fo.20)
- Silvester, Edward
smith, Tower, £10 p.a.
25 Dec. 1673–29 Sept. 1674
with Mr Smith continued to supply mint with
ironwork from 1675 to 1678
(PRO. AO 1/1602/60, Mint 6/36; HMC 79 Lindsey
MSS, p.171)
- Silvester, Thomas (buried 15 Jan. 1711)
smith, Tower, 5 Feb. 1698, £50 p.a.
25 Mar. 1698–31 Dec. 1710
(PRO. AO 1/1605/79; E 351/2103–16; Burial
Register)
- Simon, Thomas, goldsmith of London (*d.*1665)
chief engraver (with Edw. Wade), 4 Apr. 1645, £30
p.a.
25 Mar. 1645–25 Dec. 1648
chief engraver (alone)
25 Dec. 1648–25 Dec. 1662
chief engraver (with Thos Rawlins)
25 Dec. 1662–29 Sept. 1665
(PRO. AO 1/1600/43–1601/55; AO 3/702)
- Skingley, Jeremiah (*d.*17 Jan. 1708)
second clerk to warden, Tower, 6 Dec. 1693, £40
p.a.
29 Sept. 1693–17 Jan. 1708
(PRO. Mint 1/5 fo. 25; E 351/2101–14; CTP, 1557–
1696, 329; CTB, 1693–6, 412)
- Slade, Daniel
deputy assay-master, Exeter, £80 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Slingsby, Anthony
assistant to weigher and teller, Tower, £40 p.a.
24 June 1679–29 Sept. 1678
(PRO. AO 1/1602/63)
- Slingsby, Henry
described as deputy to Master-Worker Freeman,
May 1662
master-worker (with Sir Ralph Freeman), Tower,
30 Dec. 1662, £500 p.a.
30 Dec. 1662–1666
master-worker (alone), £500 p.a.
20 Dec. 1666–21 July 1680
suspended from office, which was exercised by Sir
John Buckworth (subsequently replaced by Thos
Neale), Chas Duncombe and Jas Hoare, sen.
22 July 1680–20 July 1686
Slingsby surrendered his patent 20 Apr. 1686
(PRO. E 351/2089 and 2090–4; AO 1/1631/244,
Mint 1/4 fo.31; BL. Additional MSS 31,053 and
34,358 fo.23)
- Smith, Samuel
deputy engraver, York, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Smith, William
smith
1672–8
(HMC 79 Lindsey MSS, p.171; PRO. Mint 6/36)
- Spicer, Edward
deputy weigher and teller, Exeter, £50 p.a.
24 June 1696–29 Sept. 1698
(PRO. E 351/2106; CTB, 1700–1, 253)
- Stafford, –
labourer to Hen. Harris, 12s. p.wk., 1697
(B.L. Additional MS 18,757 fo.40)
- Stanley, Henry
auditor (with Sir Fra. Goston), £20 p.a.
1 Apr. 1619–24 June 1628
auditor (with Sir Ralph Freeman)
24 June 1628–25 Dec. 1631
auditor (with John Worfield)
25 Dec. 1631–25 Mar. 1644
(PRO. E 351/2044–7; AO 1/1597/23–1599/42; AO
1/1670/499; LJ, IV, 614–15)
- Stanley, Sir John
warden, Tower, 2 Feb. 1700, £400 + £40 for his
clerk p.a.
25 Dec. 1699–1 May 1708
(PRO. AO 1/1605/81–9)
- Stapley, John
clerk to wardens, Tower, £20 p.a.
c.1664
(PRO. SP 29/109 no.88)
- Swallow, Paul
clerk of the irons and surveyor of the meltings
Tower, 4 May 1604, £40 and £10 for his clerk p.a.
1591–31 Mar. 1634
(BNJ 45 (1975), 69; CSPD, 1603–10, 105; PRO.
E351/2030–47; AO 1/1597/23–1598/32)

- Swallow, Thomas (c.1591–1676)
clerk of the irons and surveyor of the meltings,
Tower, £40 and £10 for his clerk p.a.
1 Apr. 1634–24 June 1649
re-appointed 1660–Nov. 1676, £110 p.a. for him and
his clerk until 25 Mar. 1670, £120 p.a. thereafter
(PRO. AO 1/1598/33–1599/40; AO 1/1670/499; AO
1/1600/43–1601/51; E 178/6313; *CTB*, 1676–9, 93,
365; PRO. AO 1/1601/55–1602/60; E 351/2065–6)
- Sydenham, John
deputy to Thos Bushell, Aberystwyth
(Boon, p.58)
- Symons, William (born c.1612)
smith, working for Thos Hodgkins, 1650s
(PRO. E 178/6313)
- Taylor, William
warrant for his grant was in respect of the office of
chief clerk of the mint and clerk assistant to the
weigher and teller but appears in the accounts as
follows:
assistant to weigher and teller, Tower, £40 p.a.
29 Sept. 1679–25 Mar. 1686
clerk to master-worker, £40 p.a.
29 Sept. 1682–24 June 1684
(PRO. AO 1/1602/63–8; E 351/2093; *New History of
the Royal Mint*, chap. 3)
- Tayte, Lewis
smith, Tower, £10 p.a.
17 July 1623–1641/2, when succ. by John Martin
(PRO. AO 1/1597/23–1599/42)
- Tewley, Michael
deputy king's clerk, York, £50 p.a.
24 June 1696–29 Sept. 1698
(PRO. E 351/2106; *CTB*, 1700–1, 253)
- Thompson, Edward, alderman of York
deputy master-worker, York
1696–8
(PRO. E 351/2106; *CTB*, 1697–8, 108)
- Turner, George, gent
assay-master (with And. Palmer), Tower, £66 13s.
4d and £10 for his clerk p.a.
25 Mar. 1622–25 Mar. 1634
(PRO. E 351/2047; AO 1/1597/23–1598/32)
- Tweedy, Henry
warden, Tower, 7 Feb. 1621, £100 and £20 for his
clerk p.a.
5 Feb. 1621–24 June 1623
(PRO. E 351/2046–7)
- Tyson, George (d.1608)
in 1603 he claimed that he had served in the mint
since the first year of Edward VI (1547/8)
sinker of coining dies, Tower, £20 p.a.
c.1576–1608 (will proved 4 Oct.)
(*BNJ* 45 (1975), 70; PRO. SP 46/61 fo.51; Prob.
11/117; E 351/2030–3)
- Tyson, John (son of George)
sinker of coining dies, Tower, 11 Dec. 1607, £20 p.a.
succ. George 1608–31 Mar. 1612, thereafter the post
was assigned to Giles Brattle
(*CSPD*, 1603–10, 386; PRO. E 351/2033–6)
- Vanderdort, Abraham
maker of patterns from which puncheons could be
made of the royal effigy
1625–6
(*CSPD*, 1625–6, 11, 32, 63, 78, 159, 216)
- Van Lauden, John Baptist
under-engraver, Tower, £40 p.a.
Nov. 1604–25 Mar. 1606
(PRO. E 351/2030–1)
- Villiers, Sir Edward (d.1626)
master-worker, Tower, 23 Dec. 1617
1617–1622
sequestrator (with Ric. Rogers, And. Palmer and
Sir Wm Parkhurst) for Sir Randall Cranfield's office
of master-worker, 13 Jan. 1625–14 Aug. 1626
warden (with Sir Wm Parkhurst), Tower, 12 July
1623, £100 and £20 for their clerk p.a.
17 July 1623–1 Sept. 1626
(PRO. C66/2136, AO1/1597/23–6; *DNB*)
- Vyner, Sir Edward
melter (with Edw. Backwell) of booty brought in by
Gen. Montague, 1656
receiver (with Fran. Meynell and Edw. Backwell) of
the 'harp and cross' money demonetised in 1661
(*CSPD*, 1656–7, 37, 89–90, 107–8, 317, 143, 147–8;
New History of the Royal Mint, chap. 3)
- Vyvyan, Sir Richard
[warden/master-worker], Truro
c. Nov. 1642–c. Sept. 1643
[warden/master-worker], Exeter
Sept. 1643–c. Apr. 1646
(*NC* 5th ser. 8 (1928), 216ff)
- Wade, Edward
chief engraver (with Thos Simon) £30 p.a.
25 Mar. 1645–25 Dec. 1648
(PRO. AO 1/1600/43–1601/51)
- Wade, Samuel
clerk, Exeter, £25 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Walford, Samuel, of London
deputy master-worker, Exeter
1696–8
(PRO. E 351/2108; *Mint* 1/8 fo.21; *TI*/48 no.52)

- Wallis, John, goldsmith of London
weigher and teller, Tower, £33 6s. 8d. and £10 for
his clerk p.a.
1661–24 June 1665
(*CSPD*, 1660–1, 595; *PRO*, AO 1/1601/55)
- Walter, Charles
deputy king's clerk, Bristol, £50 p.a.
24 June 1696–29 Sept. 1698
(*PRO*, E 351/2106; *CTB*, 1700–1, 253)
- Wardner, John
smith, Tower, paid piece rates by master-worker
1629–30
(*PRO*, AO 1/1628/220)
- Warrington, Edmund
deputy porter, York, £20 p.a.
1696–8
(*PRO*, T1/48 no.52)
- Webb, Edward
deputy porter, Chester, £20 p.a.
1696–78
(*PRO*, T1/48 no.52)
- Weddall (Weddell), Robert
deputy warden, Chester, £120 p.a.
24 June 1696–29 Sept. 1698
additional clerk or deputy to warden to assist with
prosecuting clippers, Tower, £60 p.a.
25 Dec. 1699–1711
for his connection with tin output, see below
(*PRO*, E 351/2073, 2103, 2106; AO1/1605/81–8;
Mint 1/8 fo.114; *CTP*, 1702–7, 347; *CTB*, 1713,
147)
- Wells, –
deputy to Jas Hoare, sen. to inspect the melting
house during the Great Recoinage
(*Newton Correspondence*, IV, 309)
- Wharton, Philip (son of Sir Thomas) *d.* 1685
warden (with Sir Thomas Wharton), Tower, 5 July
1661, £390 p.a. plus £40 incr. since death of under-
graver, plus £10 incr. since death of smith, making in
all £440.
25 Dec. 1680–30 Oct. 1684
warden (alone), Tower
30 Oct. 1684–23 Feb. 1685
(*PRO*, E 351/2067–8; *CSPD*, 1661–2, 21, 50)
- Wharton, Sir Thomas (*c.* 1615–84)
warden (with his son, Philip), Tower, 5 July 1661,
£390 p.a., plus £40 incr. since death of under-graver,
plus £10 incr. since death of smith, making in all
£440
25 Dec. 1680–30 Oct. 1684
(*PRO*, E351/2067–8; *CSPD*, 1661–2, 50; B.D. Hen-
ning, *The House of Commons, 1660–1690* (1983),
III, 700–1)
- White, Henry
potmaker, Tower
c. 1627
(*CSPD*, 1627–8, 114)
- Whitfield, Lawrence
porter, Tower, £10 p.a.
25 Mar. 1603–31 Mar. 1612
(*PRO*, E 351/2030–6)
- Wild, Robert
auditor (with Barth. Beale), £20 p.a.
24 June 1670–25 Dec. 1670
(*PRO*, E 351/2065)
- Williams, Francis
deputy assay-master, Tower, £40 p.a.
1589–24 June 1603
(*BNJ* 45 (1975), 71; *PRO*, E 351/2030)
- Williams, John (alias Cherrylickhum)
porter, Aberystwyth, 30 July 1637, £10 p.a.
1637
(*Boon*, p.57)
- Williams, Thomas
servant to the melter, Tower
1684
(*CTB*, 1681–5, 1067)
- Williams, Thomas
clerk to master-worker, Chester, £40 p.a.
24 June 1696–24 June 1698
(*PRO*, E 351/2106)
- Williams, –
smith to Hen. Harris, 15s. p.wk, 1697
(*BL*, Additional MS 18,757 fo.40)
- Williams, Walter
assay-master (with father), Tower, 7/8 Feb. 1583,
£66 13s. 4d. and £10 for his clerk p.a.
1583–25 Dec. 1586
assay-master (alone), Tower
25 Dec. 1586–25 Mar. 1605
assay-master (with And. Palmer), Tower
25 Mar. 1605–31 Mar. 1620
(*BNJ* 45 (1975), 71; *PRO*, E 351/2030–44)
- Williamson, Robert, goldsmith of York
overseer of meltings, York
1697
(*CJ* XI, 700–1)
- Wilson, Joseph
deputy weigher, Bristol, £50 p.a.
1696–8
(*PRO*, T1/48 no.52)
- Wivell, Francis
deputy master-worker, York

- 1696–8
(PRO. E 351/2190; T1/48 no.52)
- Wollaston, Sir John, goldsmith of London (*d.*1658)
melter, Tower
27 Nov. 1626–31 May 1653
(GH. App. Bk. I, 141; PRO. AO 1/1628/220–26,
AO 1/1629/228–34, E 178/6313)
- Wood, James
said to be bookkeeper (with John Reynolds) in a
report on the mint in ? 1652, but no evidence in the
accounts of his being paid
(*CSPD*, 1652–3, 69–70)
- Wood, John
auditor (with Barth. Beale), £20 p.a.
1663–24 June 1670
(PRO. AO 1/1601–55, E 351/2065)
- Wood, William
named in the commission of 1 Apr. 1625 as being
comptroller (with Ric. Rogers) but is never included
in the mint's lists of officers receiving salaries
(PRO. C66/2351 m. 2d. printed in *Foedera*, XVIII.
6)
- Woodnoth, Benjamin
deputy comptroller, Bristol, £100 p.a.
24 June 1696–29 Sept. 1698
(PRO. E 351/2106; *CTB*, 1700–1, 253)
- Woodward, John (*d.*1665)
assay-master, Tower £66 13s. 4d. and £10 for his
clerk p.a.
1660–July 1665
John exercised this office in the absence of his
father, Thomas, who remained abroad on a plan-
tation on York river, Virginia. Although the mint
was authorised in 1665 to allow Charles Gifford to
succeed John Woodward, in 1666 Gifford obtained
another grant elsewhere, leaving the way clear for
John Brattle to become assay-master
(PRO. Mint 1/4 fos 3, 59–60; *CSPD*, 1664–5, 474,
491, 503; *CSPD*, 1665–6, 406; *CSPD*, 1667–8, 626;
CSPD, 1668–9, 82; PRO. C 205/13 no.5, AO
1/1601/55)
- Woodward, Thomas
mentioned in connection with the assay-master's
post at the Restoration, but never recorded in the
mint accounts as having actually exercised it. See
previous entry
- Worfield, John
auditor (with Hen. Stanley), £20 p.a.
25 Dec. 1631–24 June 1643
(PRO. AO 1/1598/30–1599/42, AO 3/702, AO 1/
1670/499)
- Wynne, Owen
warden, Tower, 13 Oct. 1686, £440 p.a.
29 Sept. 1686–1 Feb. 1690 (when grant revoked)
(PRO. E 351/2069–71; *CTB*, 1689–92, 486)
- Yates, Robert
deputy master-worker, Bristol
1698
(see How, Alex.)
(*CTB*, 1697–8, 108; PRO. E 351/2190)
- Yaxlee, Henry
deputy surveyor, Norwich, £50 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Young, John
deputy engraver, Norwich, £40 p.a.
24 June 1696–24 June 1698
(PRO. E 351/2106)
- Moneyers, Labourers and Engineers*
- Abbott, John
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Adamson, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Adamson, William
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Addams, Peter
smith working for Robert Colborne, 1678–80
(PRO. Mint 1/3 fo.64)
- Adkins, Thomas
moneyers' labourer, 1696
(PRO. T 1/38; *BNJ* 27 (1952–4), 208 mistakenly
gives the name as Atkins)
- Aires, Edward
labourer, 1653
(*Answer of the Moniers*)
- Alder, Robert
apprentice moneyer, c.1698
(PRO. Mint 19/1 no.268)
- Amerchen, Thomas
moneyer, 1651
(PRO. SP 18/15 no.69)
- Anderkin, Philip
labourer, 1653
(*Answer of the Moniers*)
- Anderson, Thomas
moneyer 1653–c.1685

- provost of moneyers, and engineer, £200 p.a.
1685–3 Feb. 1691
provost of moneyers
25 Mar. 1691–25 Mar. 1694
(PRO. E 351/2098–2101; AO 1/1604/76; E 112/588
no.8; *Answer of the Moniers; Mint Report 1849*,
p.54)
- Apps, Robert
moneyer, 1672–4
(PRO. E 351/2122–3)
- Apps, Philip
moneyer, 1685
(PRO. E 112/588 no.8)
- Arnold, Richard
moneyer, Aberystwyth, 1639, shared £100 p.a. with
two other moneyers – see Corbet, John; Sutch,
Henry
described as 'of the Mint', presumably at the Tower,
1644
(Boon, p.59; *Cal. of the Committee for Advance of
Money, 1642–56*, p.360)
- Aron, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Ashton, William
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Aspe, Robert
moneyer, 1653
(*Answer of the Moniers*)
- Atkins – see Adkins, Thomas
- Atkins, William
labourer, 1653
(*Answer of the Moniers*)
- Baker, Edward
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Baker, Moses
moneyers' labourer, 1696
sent to Norwich during the Great Recoinage
(BNJ 27 (1952–4), 208; BL. Additional MS 18,084
fo.192)
- Baldwin, John
moneyer, 1637
(PRO. SP 16/374 no.60)
- Baldwin, Robert
labourer, 1653
(*Answer of the Moniers*)
- Ballard, John
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Bayley, Thomas
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Bedford, Walter
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Benett, Edward
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Benfield, Daniel
moneyer, 1637–53
(PRO. SP 16/374 no.60; SP 18/15 no.69; *Answer of
the Moniers*)
- Benfield, Gabriel, of Stepney (Middx)
moneyer, 1653–9
(*Answer of the Moniers; Middlesex County Records*,
III, edited by J.C. Jeaffreson (1888), pp.276–7.)
- Benfield, John
fl.1614/15–53
possibly joint provost, 1640–53 (see Simon Corbet)
(GL.9171/22 fo.389; PRO. AO1/1628/226–1629/
234, SP 16/374 no.60)
- Bently, William
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Bernald, James
labourer, 1653
(*Answer of the Moniers*)
- Bett, John
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Betts, Francis
moneyers' labourer, 1696
(BNJ 27 (1952–4), 207)
- Bickerton, Edward
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Bincks, Edward
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Blaygrave, William
labourer, 1653
(*Answer of the Moniers*)
- Blessett, Richard

- moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Blondeau, Peter (d.1672)
engineer, Tower. £100 p.a.
25 Mar. 1656-1658
engineer, Tower. £100 p.a. + 3d./lb on silver coin
and 12d./lb on gold coin, for 21 years
1662-72
(*CSPD*, 1656-7, 106, 113-14; 1661-2, 375, 522;
PRO, Prob. 11/338 fo.200)
- Blunt, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Boone, James
moneyer, 1653
(*Answer of the Moniers*)
- Borne, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Borrington, George
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Boyston, Anthony
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Braint, John (sen.)
moneyer, 1685; 1692-3
provost of moneyers
25 Mar. 1694-1714. . . .
engineer 'or marker of moneys', £100 p.a.
1696-1714. . . .
(PRO, E 351/2104-2120; E112/588 no.8; E351/
2100-1)
- Braint, John (jun.) son of J. Braint, sen.
apprentice moneyer, c.1698
(PRO, Mint 19/1 no.268)
- Bridgman, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Brook, Richard
moneyer, 1637
(PRO, SP 16/374 no.60)
- Brooke (Brookes), Thomas (sen.)
moneyer, 1637-53
(PRO, SP 16/374 no.60; SP 18/15 no.69; *Answer of
the Moniers*)
- Brooke (Brooks), Thomas (jun.)
moneyer, 1653
(*Answer of the Moniers*)
- Brown, Gundry
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Brown, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Browne, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Bud, Daniel
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Butterfield, Francis
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Butterfield, John
moneyer, 1637-53
(PRO, SP 16/374 no.60; SP 18/15 no.69; *Answer of
the Moniers*)
- Castele, Peter, - see La Castill
- Cave, Francis
labourer, 1653
(*Answer of the Moniers*)
- Cave, Robert
labourer, 1653
(*Answer of the Moniers*)
- Chalkhill, William
moneyers' labourer, Tower, 1696
moneyer, Exeter, 1696-8
moneyer, Tower, c.1698
(*BNJ* 27 (1952-4), 208; J. Andrews, W. Elston and
N. Shiel, *Exeter Coinage* (Exeter, 1980), p.24; BL,
Additional MS 18,084 fo.192; PRO, Mint 19/1
no.268)
- Churchill, John
labourer at Chester during the Great Recoinage
(BL, Additional MS 18,084 fo.192)
- Clay, James
moneyer, 1637-53
(PRO, SP 16/374 no.60; *Answer of the Moniers*)
- Cletherwell, Richard
labourer, 1653
(*Answer of the Moniers*)
- Clarke, David
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Clarke, Thomas

- moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Clayton, Edward
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Cocks, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Cocks, Thomas
labourer at Bristol during the Great Recoinage
(BL. Additional MS 18.084 fo.192)
- Colborne, John (*d.*1679)
engineer, Tower, £100 p.a.
Mar. 1672-Nov. 1679
(PRO. Prob. 11/338 fo.200 and 11/361)
- Colborne, Robert (brother of John)
moneyer or engineer, Tower, £100 p.a.
Nov. 1679-85
(PRO. Prob. 11/361; E 112/588 no.8; *CTB*, 1685-9, 750)
- Coleman (Collman), Andrew
moneyer, 1637-53
(PRO. SP 16/374 no.60, SP 18/15 no.69; *Answer of the Moniers*)
- Collard, George
moneyer, 1651-3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Collard, Henry
moneyer, 1637
(PRO. SP 16/374 no.60)
- Collard, John
moneyer, 1637
(PRO. SP 16/374 no.60)
- Collard, Richard I
moneyer, 1653
(*Answer of the Moniers*)
- Collard, Richard II
moneyer, 1685-c.1698
(PRO. E112/588 no.8; E351/2100, Mint 19/1 no.268)
- Collard, Richard III
apprentice moneyer, c.1698
moneyer by 1707, when he was sent to the Edinburgh mint to assist in the Scottish recoinage
(PRO. Mint 19/1 no.268; *CTP*, 1702-7, 519, *CTB*, 1706-7, 354, 1708, 185)
- Collumer, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Colvine (Colvyn), Edward, of Walthamstow (Essex)
(*d.*1610)
moneyer, 1576-1610
(*BNJ* 45 (1975), 73; GL.9171/21 fo.267v)
- Collens, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Constable, Frances
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Cooke, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Cooke, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Corbet, Garnet
moneyer, 1653
(*Answer of the Moniers*)
- Corbet, John
moneyer, Aberystwyth, 1640, shared £100 p.a. with two other moneyers, see Arnold, Richard; Sutch, Henry
moneyer, Tower, 1650-3
(PRO. SP 18/15 no.69; *CSPD*, 1651-2, 238; *Answer of the Moniers*; Boon, pp.59, 180, 223)
- Corbet, Simon
1637-53
referred to as provost in 1637, 1639-40, 1645 and 1651-3; however, he received payment on behalf of the company first with Thos Thornton (1637-9) and then with John Benfield (1640-53), which may imply that the provostship was jointly exercised at times.
(PRO. AO1/1628/223-1629/234; *Privy Council Register*, 1637-8, 406; *CSPD*, 1651, 487)
- Corbet, Simon (jun.)
moneyer, 1653
(*Answer of the Moniers*)
- Cornewe, Thomas, of Walthamstow (Essex)
(*d.*1607/8)
moneyer, 1595-1607/8
(*BNJ* 45 (1975), 73; GL.9171/21 fo.4v)
- Danse, Edward
moneyer, 1637
(PRO. SP 16/374 no.60)
- Darby, Edward
labourer, 1653
(*Answer of the Moniers*)

- Daveaux, –
a servant of Briot, ? for whom he made working tools
– see also, Le Roy, Pingart, D. Ramage
(PRO, Mint 1/4 fo.32)
- Dawson, Edward
moneyer, 1653
(*Answer of the Moniers*)
- Dawson, William
moneyer, 1637–53
(PRO, SPI6/374 no.60; *Answer of the Moniers*)
- De Caux, Isaac
Blondeau bequeathed his patent and working tools jointly to him and John Colborne. Only Colborne is subsequently mentioned in the accounts, however. A 'Mr Decoe' worked for Robert Colborne, 1679/80.
(PRO, Prob. 11/338 fo.200, Mint 1/3 fo.64)
- Dell, George
labourer at Chester during the Great Recoinage
(BL, Additional MS 18,084 fo.192)
- Denham, Anthony
moneyer, before 1605
(PRO, Prob. 11/105 36 Hayes)
- Denham, Thomas (*d.*1605) of St Peter ad Vincula (Tower of London)
provost of the moneyers, 1576–1605
(*BNJ* 45 (1975), 73; PRO, Prob. 11/105)
- Diminitt, Bartholomew
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Diminitt, Frances
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Doyley, Thomas
see above under officials
- Draper, William
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Durrant, Richard
moneyer, 1610
(GL.9171/21 fo.267v)
- East, William
labourer, 1653
(*Answer of the Moniers*)
- Edge, John
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Ellet, George
labourer, 1653
(*Answer of the Moniers*)
- Emes, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Farmer, Clement
labourer at Exeter during the Great Recoinage
(BL, Additional MS 18.084 fo.192)
- Farrow, Ellice
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Fearn, George
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Field, John
labourer, 1653
(*Answer of the Moniers*)
- Ficher, Luke
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Finch, Robert
labourer, 1653
(*Answer of the Moniers*)
- Floyd, Hugh
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Floyd, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Fortune, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Francks, William
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Freeman, Edward
moneyers' labourer, 1696
(*BNJ* 27 (1952–4), 208)
- Freeman, Henry
labourer, 1653
(*Answer of the Moniers*)
- Freeman, Samuel
labourer, 1653
(*Answer of the Moniers*)
- Freman, John

- moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Freman, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Fulham, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Fuller, Robert (d.1605/6), of St Peter ad Vincula
moneyer, 1576-1605/6
(*BNJ* 45 (1975), 74; PRO. Prob. 11/107, 3 Stafford)
- Gable, John
labourer, 1653
(*Answer of the Moniers*)
- Gannell, William
moneyer, 1637
(PRO. SP 16/374 no.60)
- Garnett, Michael (d.1665)
fl. 1636-65
received (with John Perrey) payments on behalf of
the company 1636-7 which may indicate that he was
joint provost at that time; certainly provost at the
time of his death
(PRO. AO1/1628/222; SP 16/374 no.60; GL.
9174/10)
- Garnett, Michael
moneyer, 1685-92/3
(PRO. E 112/588 no.8; E 351/2100)
- Garnett, Richard
moneyer, 1610
(GL. 9171/21 fo.267v)
- Garnett, Thomas
moneyer, 1611-60
(GL. 9171/21 fo.383v; PRO. SP 16/374 no.60, SP
18/15 no.69, E351/2087; *Answer of the Moniers*)
- Garnett, William, of Walthamstow (Essex) (d.1617)
moneyer, 1611-17
(GL. 9171/21 fo.383v, and 9171/23 fo.206)
- Garnett, William
moneyer, 1637
(PRO. SP 16/374 no.60)
- Gascoign, Robert
moneyer, 1653-80
(*Answer of the Moniers*; PRO. E 351/2122-4; Mint
1/3 fo.53)
- Gascoigne, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Gascoigne, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Godfrey, Henry
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Gore, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Grant, Mungo
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Graves, Robert
moneyer, 1653
(*Answer of the Moniers*)
- Green, John
moneyers' labourer, 1696
sent to Bristol during the Great Recoinage
(*BNJ* 27 (1952-4), 208; BL. Additional MS 18,084
fo.192)
- Greene, Edward, of Tottenham (Middx) (d.1645)
moneyer, 1643-5
(*Cal. of Committee for Advance of Money, 1642-56*,
p.136)
- Greene, William, of Hackney (Middx) (d.1618)
moneyer, 1596-1618
(*BNJ* 45 (1975), 74; GL. 9171/23 fo.123)
- Grey, John
labourer at Bristol during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Gunn, William
labourer, 1653
(*Answer of the Moniers*)
- Hales, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Haley, Henry
apprentice moneyer, c.1698
moneyer, 1707-14. . .
in 1707 he was sent to the Edinburgh mint to assist in
the Scottish recoinage
(*CTP*, 1702-7, 519; *CTB*, 1706-7, 354; PRO. Mint
19/1 no.268)
- Hall, John
moneyers' labourer, 1696
this name appears twice in this list
(*BNJ* 27 (1952-4), 208)
- Hall, William

- labourer, 1653
(*Answer of the Moniers*)
- Hammond, Thomas, of Walthamstow (Essex) (d.1611)
moneyer, before 1611
(GL. 9171/21 fo.383v)
- Harding, Matthias
moneyer, 1685
(PRO. E 112/588 no.8)
- Harding, William
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Harris, Joseph
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Harris, Nicholas
moneyer, 1637-53
provost, 1669-80
(PRO. SP 16/374 no.60; E 351/2122-4; Mint 1/3 fo.53; *Answer of the Moniers*; *Mint Report 1849*, p.61)
- Harris, William
labourer at York during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Harrison, John
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Hauton (Hawten), Stephen
moneyer, 1637-53
(PRO. SP 16/374 no.60; *Answer of the Moniers*)
- Hazelwood, William
labourer, 1653
(*Answer of the Moniers*)
- Hendle, William
moneyers' labourer, 1696
(BNJ 27 (1952-3), 208)
- Heward, Edward
moneyer, 1651-3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Heyley, Peter, of Tottenham (Middx) (d.1604/5)
moneyer, 1585-1604/5
(BNJ 45 (1975), 74; GL. 9171/20 fo.97v)
- Hill, John
moneyer, 1692-c.8
moneyer at Bristol during Great Recoinage
(PRO. E 351/2100; Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- Hill, Roger
moneyers; labourer, 1696
(BNJ 27 (1952-3), 208)
- Hoare, Daniel
apprentice moneyer, c.1698
apprentice moneyer at Exeter during Great Recoinage
(PRO. Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- Hodgkins, Edward
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Hopkins, Richard
labourer, 1653
(*Answer of the Moniers*)
- Hopper, George
moneyer at Bristol during Great Recoinage
moneyer, c.1698
(PRO. Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- Hornol, Benjamin
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Horton, Thomas
labourer, 1653
(*Answer of the Moniers*)
- Howell, James
moneyers' labourer, 1696
(PRO. T 1/38; BNJ 27 (1952-4), 208 mistakenly gives the names as Jowell)
- Hublyn, Richard
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Hunt, Abraham
moneyer, 1651-3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Hunt, Robert (d.1643)
moneyer, Aberystwyth
moneyer, Oxford, before 1643 (described as mint-master)
(Boon, p.59)
- Hunt, Samuel
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Hunt, Thomas
moneyer, 1680-5
(PRO. E 112/588 no.8, Mint 1/3 fo.53)
- Hunt, Thomas

- moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Hutton, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Hyde, Clement
moneyers' labourer, 1696
sent to York during the Great Recoinage
(*BNJ* 27 (1952-4), 208; BL. Additional MS 18,084, fo.192)
- Hyde, Thomas
moneyers' labourer, 1696
sent to Norwich during the Great Recoinage
(*BNJ* 27 (1952-4), 208; BL. Additional MS 18,084 fo.192)
- Idle, Jeremy
moneyers' labourer, 1696
(PRO. T 1/38; *BNJ* 27 (1952-4), 208 mistakenly gives the name as Pole)
- Ines, Joseph
moneyers' labourer, 1696
(PRO. T 1/38; *BNJ* 27 (1952-4), 208 mistakenly gives the name as Jones)
- Isly, Francis
labourer at Chester during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Jackson, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Johnson, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Johnson, Richard
moneyer, 1650-3
(PRO. SP 18/15 no.69; *CSPD*, 1651-2, 238; *Answer of the Moniers*)
- Jones, Edward
labourer, 1653
(*Answer of the Moniers*)
- Jones, John
moneyers' labourer, 1696
this name appears twice on this list
(*BNJ* 27 (1952-4), 208)
- Jones, Joseph, - see Ines
- Jones, Rise
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Jones, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Jones, William
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Jowell - see Howell, James
- Justus, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Kemp, Thomas
moneyer, 1696-c.8
moneyer at York during Great Recoinage
(PRO. E 351/2106; Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- King, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- King, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Kinge, John
moneyer, 1637-44
(PRO. SP 16/374 no.60; *Cal. of the Committee for Advance of Money*, 1642-56, p.136)
- Kirkman, Henry
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- La Castill (Castele), Peter
employed by Blondeau in edge-marking and bequeathed £20 p.a. by him.
smith, working for Robt Colborne, 1679-80
(PRO. Prob 11/338 fo.200; Mint 1/3 fo.64)
- Lancashire, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Lane, William
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Langly, John
labourer, 1653
(*Answer of the Moniers*)
- Lawrence, George (nephew of Chris. Pate)
1635-7
received payments on behalf of the company 1635-6, which may indicate that he was provost at that time
(PRO. AO1/1628/221, SP 16/374 no.60, Prob. 11/129, 13 Weldon, E101/305/8 no.1)

- Ledger, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Lee, Edward
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Lee, Henry
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Lee, Joseph
moneyers' labourer, 1696
(*BNJ* (1952-4), 208)
- Lentton (Leutton), Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Le Roy, -
a servant of Briot, ? for whom he made working tools
- see also Daveaux, Pingart, D. Ramage
(PRO. Mint 1/4 fo.32)
- Lewis, Henry
moneyer, 1637-53
(PRO. SP 16/374 no.60, SP 18/15 no.109, SP 18/16 no.87; *Answer of the Moniers*)
- Loe, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Looker, Henry
moneyer, c.1698
(PRO. Mint 19/1 no.268)
- Looker, James
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Lucar, James
smith working for Robert Colborne, 1679-80
(PRO. Mint 1/3 fo.64)
- Lucke, John
labourer, 1653
(*Answer of the Moniers*)
- Ludlow, William
labourer, 1653
(*Answer of the Moniers*)
- Lyon, Daniel
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Marsh, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Marsh, Nathaniel (d.1669), of the Tower of London
moneyer, 1653-69
(PRO. Prob. 11/331; *Answer of the Moniers*)
- Matthews, John
labourer, 1653
(*Answer of the Moniers*)
- Mainard, Edward
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Marsh, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Maynard, Edward
moneyer, described in 1644 as having been at Oxford
moneyer, Tower, 1653
(*Answer of the Moniers*; *Cal. for the Committee for Compounding 1643-60*, pt.II, p.863)
- Maynard, Edward
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Maynard, Tobias
moneyer, 1651-3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Maynard, William
moneyer, 1653
(*Answer of the Moniers*)
- Mellet, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Merritt, Richard (godson of Chris. Pate)
moneyer, 1637
(PRO. SP 16/374 no.60; Prob. 11/129, 13 Weldon)
- Michell, John
labourer, 1653
(*Answer of the Moniers*)
- Moggs, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Mun, William, of Hackney (Middx) (d.1610/11)
moneyer, 1576-1610/11
(*BNJ* 45 (1975), 75; GL. 9171/21 fo.317)
- Muriel, Nicholas
labourer, 1653
(*Answer of the Moniers*)
- Newman, Charles
labourer at Norwich during the Great Recoinage
(BL. Additional MS 18,084 fo.192)

- Newman, John
moneyer, 1680
(PRO. Mint 1/3 fo.53)
- Newman, William
moneyer, 1605
(PRO. Prob. 11/107, 3 Stafford)
- Nichols, John, of East Ham (*d.*1707)
moneyer, 1680-1707
(PRO. E 112/588 no.8; Mint 1/3 fo.53; Mint 19/1 no.268; Essex County Record Office, Chelmsford: 30 ER 29)
- Nichols, Richard (buried 19 Jan. 1669)
head of the moneyers, Shrewsbury, Oxford, Bristol, 1642-6
moneyer, Tower, 1651-60
described as provost ?1662
(PRO. SP 18/15 no.69, E 351/2087; Boon, p.100; PRO. SP29/448 no.52; Burial Register)
- Nichols, Thomas, of Hackney (Middx) (*d.*1612/13)
moneyer, before 1612/13
(GL. 9171/22 fo.125)
- Nichols (Nickoll), William
moneyer, 1637-8
?the 'Mr Nickolls moneyer' buried 20 Sept. 1666
(PRO. SP 16/374 no.60; *Privy Council Register*, 1637-8, 520; Burial Register)
- Nichols (Nicoll), William
moneyer, 1692-c.8
moneyer at Chester during Great Recoinage
(PRO. E 351/2100; Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- Nicholson, Valentine
moneyer, 1637-53
(PRO. SP 16/374 no.60, SP 18/15 no.69; *Answer of the Moniers*)
- Odell, Thomas
moneyers' labourer, 1696
sent to Exeter during the Great Recoinage
(BNJ 27 (1952-4), 208; BL. Additional MS 18,084 fo.192)
- Page, Richard
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Page, William
labourer, 1653
(*Answer of the Moniers*)
- Palmer, Frances
moneyers' labourer, 1696
(BNJ 27 (1952-3), 208)
- Panter, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Parkhurst, William
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Pate, Christopher (*d.*1616), of Stepney (Middx)
moneyer, 1614-16
(PRO. Prob. 11/129, 13 Weldon; *Middlesex County Records*, I, 412)
- Patterson, William
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Peacocke, Henry
labourer, 1653
(*Answer of the Moniers*)
- Pegg, Andrew
labourer at Bristol during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Pierson, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Pencase, William
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Perrey, John
*f.*1636-7
received (with Michael Garnett) payments on behalf of the company 1636-7, which may indicate that he was joint provost at that time
(PRO. AO1/1628/222, SP16/374 no.60)
- Perrey (Perry), Henry
moneyer, Tower, 1637
head moneyer, Aberystwyth, 1640-2
(PRO. SP 16/374 no.60; Boon, p.59)
- Perrin, Henry
moneyer, 1637-53
(PRO. SP 16/374 no.60, SP 18/15 no.69; *Answer of the Moniers*)
- Perrin, Thomas, of Walthamstow (Essex) (*d.*1614)
moneyer, before 1614
(GL. 9171/22 fo.384)
- Pickhaver, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952-4), 208)
- Pigg, Thomas
labourer at York during the Great Recoinage
(BL. Additional MS 18,084, fo.192)

- Pingart, –
a servant of Briot, ?for whom he made working tools
– see also Daveaux, Le Roy, D. Ramage
(PRO. Mint 1/4 fo.32)
- Pole – see Idle, Jeremy
- Pollard, John
moneyer, 1637–53
(PRO. SP 16/374 no.60; *Answer of the Moniers*)
- Pollick, Samuel
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Pookey, John
labourer, 1653
(*Answer of the Moniers*)
- Powell, John
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Powell, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Prest, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Prince, Joseph
labourer, 1653
(*Answer of the Moniers*)
- Pryce, William
labourer, 1653
(*Answer of the Moniers*)
- Purser, Phillip
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Purzee, William
moneyer, 1651
(PRO. SP 18/15 no.69)
- Pye, John, of Stepney (Middx) (d.1608)
provost of moneyers, c.1605–8
(PRO. Prob. 11/107; GL 9171/21 fo.74)
- Pycrofte, Thomas
smith working for Robert Colborne, 1679–80
(PRO. Mint 1/3 fo.64)
- Quicke, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952–3), 208)
- Rabads, William
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Ramage, David (d.1661), of the Tower of London
described by Blondeau in 1650 as an Irish locksmith,
a former servant of Briot for whom he forged tools
and marked brass counters
[See also Daveaux, Le Roy, Pingart]
1641/2, makes equipment for mints at York and
Shrewsbury
described as a moneyer from 1650
1660, authorised by Treasury to continue to pre-
serve the mills, presses, cutters, and other engines
used in the Tower mint
(PRO. AO 1/1599/42, Prob. 11/306, Mint 1/4 fo.3;
SP 18/15 no.69; W.R. Hamilton, 'Blondeau's pro-
posal for reforming the coinage of England', NC 1
(1838–9), 165–80; CSPD, 1651–2, 238, 1652–3, 446)
- Ramzy, John
labourer, 1653
(*Answer of the Moniers*)
- Ranch, John
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Ransford, Richard
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Rattleife, Robert
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Rewbub, Stephen
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Ridgden, Anthony
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Rise, James
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Robards, William
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Robinson, Daniel, of Chadwell (Essex) d.1689
moneyer, 1653–89
(*Answer of the Moniers*; PRO. E 112/588 no.8;
Essex County Record Office, Chelmsford, 233 ER
25)
- Robinson, Thomas, sen. (d.1657), of High Ongar
(Essex)
moneyer, 1637–57
(PRO. Prob. 11/263, SP 16/374 no.60; *Answer of the
Moniers*)

- Robinson, Thomas, junior
moneyer, 1653
(*Answer of the Moniers*)
- Rogers, Abraham
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Rose, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Rowe, Henry
moneyer, 1637-53
(*PRO*. SP 16/374 no.60; SP 18/15 no.69; *Answer of the Moniers*)
- Rowland, Joseph
labourer, 1653
(*Answer of the Moniers*)
- Russell, George
moneyer, 1692-c.8
(*PRO*. E 351/2100, 2073; Mint 19/1 no.268)
- Russell, John
moneyer, 1685
(*PRO*. E 112/588 no.8)
- Russell, Thomas
moneyer, 1653-80
(*Answer of the Moniers*; *PRO*. E 351/2122-3, Mint 1/3 fo.53)
- Sanders, Joseph
moneyer, 1653
(*Answer of the Moniers*)
- Sarcher, Richard
labourer at Exeter during the Great Recoinage
(*BL*. Additional MS 18.084 fo.192)
- Savidge, James
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Scarrot, William
labourer at Norwich during the Great Recoinage
(*BL*. Additional MS 18.084 fo.192)
- Scott, Rowland
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Seabrook, Charles
moneyer, 1680
(*PRO*. Mint 1/3 fo.53)
- Seabrook, Edward
moneyer, 1692-c.8
moneyer at Norwich during Great Recoinage
- (*PRO*. E 351/2100; Mint 19/1 no.268; *BL*. Additional MS 18.084 fo.192)
- Seabrook, Thomas
moneyer, 1674-1707
This is probably not the career of one man because a Thomas Seabrook was an apprentice moneyer at Norwich during the Great Recoinage and is also mentioned in a document of c.1698 as an apprentice moneyer. In 1707 he was sent to the Edinburgh mint to assist in the Scottish recoinage
(*CTP*, 1702-7, 519, *CTB*, 1706-7, 354; *PRO*. E 351/2124; Mint 19/1 no.268; *BL*. Additional MS 18.084 fo.192)
- Seares, Robert
moneyer, 1685
(*PRO*. E112/588 no.8)
- Sedley, Martin
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Selby, Isaac
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Serby, William
moneyer, 1653
(*Answer of the Moniers*)
- Shambrooke, William
moneyer, 1653
(*Answer of the Moniers*)
- Shaw, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Shelley, John
labourer, 1653
(*Answer of the Moniers*)
- Sheppard, William
labourer at Chester during the Great Recoinage
(*BL*. Additional MS 18.804 fo.192)
- Shoncke, John
moneyer, 1637-53
(*PRO*. SP 16/374 no.60, SP 18/15 no.69; *Answer of the Moniers*)
- Skratchly, Simon
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Smart, John
labourer at York during the Great Recoinage
(*BL*. Additional MS 18.084 fo.192)
- Smith, James

- moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Smith, John
moneyers' labourer, 1696
this name appears twice in this list
sent to York during the Great Recoinage
(*BNJ* 27 (1952-4), 208; BL. Additional MS 18,084 fo.192)
- Smith, Joseph
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Smyth, William
labourer, 1653
(*Answer of the Moniers*)
- Sothbey, Matthew
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Sparks, James
labourer, 1653
(*Answer of the Moniers*)
- Stable, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Sternell (Sternett), Richard, of Whitechapel (Middx)
moneyer, 1653-61
(*Answer of the Moniers; Middlesex County Records*, III, edited by J.C. Jeaffreson (1888). p.311)
- Stephenson, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Sturton, Edward
moneyer, 1685-?1700
(PRO. E 112/588 no.8, E 351/2100, Mint 19/1 no.26; *CTB*, 1693-6, 223-4)
- Stuart, Charles
served as an apprentice moneyer at Norwich and then as a moneyer during Great Recoinage
(PRO. Mint 19/1, fo.208 and no.268; BL. Additional MS 18,084 fo.192)
- Sutch, Henry
head-moneyer, Aberystwyth, shared £100 p.a. with two other moneyers
Jan. 1639-Apr. 1642
see Corbet, John; Arnold, Richard
(Boon, pp.59, 176-94)
- Sutton, Christopher
moneyer, 1685-c.98
(PRO. E 112/588 no.8, E 351/2100, Mint 19/1 no.268; *CTB*, 1693-6, 224)
- Sutton, Christopher (jun.)
apprentice moneyer, c.1698, also at York during Great Recoinage
(PRO. Mint 19/1 no.268; BL. Additional MS 18,084 fo.192)
- Sutton, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Sutton, Thomas
apprentice moneyer, c.1698
(PRO. Mint 19/1 no.268)
- Swan, Wa[l]ter
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Tauntery, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Taverner, George
moneyer, 1653
(*Answer of the Moniers*)
- Taverner, John (d.1680), of Woodford (Essex)
moneyer, 1653-80
(PRO. Prob. J1/362; *Answer of the Moniers*)
- Taverner, William (buried 15 Dec. 1679)
moneyer, 1650-79
(PRO. SP 18/15 no.69, E 351/2124; *CSPD*, 1651-2, 238; *Answer of the Moniers*; Burial Register)
- Taylor, Isaac
labourer, 1653
(*Answer of the Moniers*)
- Taylor, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-3), 208)
- Taylor, Walter
moneyer, 1651-3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Teaser, George
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Tedsell, Jeffry
labourer, 1653
(*Answer of the Moniers*)
- Temporall, John
labourer at Exeter during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Teple, William
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)

- Thede, Edward
labourer, 1653
(*Answer of the Moniers*)
(London) (? = Edw. Worldly)
moneyer, before 1677
(PRO. Prob. 11/354)
- Theifeild, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Warman, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Thornton, Thomas
fl. 1614/15
provost
26 Nov. 1626-1 Aug. 1635
possibly joint provost, 1637-9 (see Simon Corbet)
(GL. 9171/22 fo.389; PRO. A01/1628/220, 223-4)
Warner, John
moneyer, 1651-3
(PRO. SP 18/15 no.109; *Answer of the Moniers*)
- Thornton, William, of Walthamstow (Essex) (d.1614/15)
moneyer, before 1614/15
(GL. 9171/22 fo.389)
Warner, Richard
moneyer, 1653
(*Answer of the Moniers*)
- Threwgood, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Watts, Robert
labourer, 1653
(*Answer of the Moniers*)
- Tickner, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Weatherley, John
moneyer, 1653
(*Answer of the Moniers*)
- Trapps, John
moneyer, 1692/3-c.1700
(PRO. E 351/2100, Mint 19/1 fo.217)
Weelewright, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Turner, Richard
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Weyman, Jacob
moneyers' labourer, 1696
sent to Chester during the Great Recoinage
(*BNJ* 27 (1952-4), 208; BL. Additional MS 18.084 fo.192)
- Tyhurst, Peter
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
White, Francis
labourer, 1653
(*Answer of the Moniers*)
- Villers, John
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Wiggins, William (d.1631), of St Botolph's Aldgate (London)
moneyer, before 1631
(Br.Rec.Soc. 89)
- Wager, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Wilder, (Willdor), James
moneyer, 1680-c.98
(PRO. E 112/588 no.8, E 351/2100 and 2073, Mint 1/3 fo.53, Mint 19/1 no.268; *CTB*, 1693-6, 224)
- Walford, Samuel
smith working for Robert Colborne, 1679-80
(PRO. Mint 1/3 fo.64)
Wilkinson, Robert
labourer, 1653
(*Answer of the Moniers*)
- Walker, Benjamin
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Wilkison, Robert
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Walker, Thomas
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
Williams, Morgan
moneyers' labourer, 1696
(*BNJ* 27 (1952-4), 208)
- Warley, Edward (d.1677), of St Botolph's Aldgate
Wilson, Christopher

- moneyer, 1637–53
(PRO. SP 16/374 no.60; *Answer of the Moniers*)
- Wodkins, Thomas
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Womsley, Edward
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Wood, John
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Woodard, Calib
labourer at Bristol during the Great Recoinage
(BL. Additional MS 18,084 fo.192)
- Woods, George
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Worldly, Edward (? = Edw. Warley)
moneyer, 1653
(*Answer of the Moniers*)
- Wright, Robert
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Wright, Zachary
moneyers' labourer, 1696
(BNJ 27 (1952–4), 208)
- Yeats (Yates), James
moneyers' labourer, 1696
sent to Exeter during the Great Recoinage
(BNJ 27 (1952–4), 208; BL. Additional MS 18,084 fo.192)
- Young, Thomas
moneyer, 1644–53
(*Answer of the Moniers; Cal. of the Committee for Advance of Money. 1642–56. p.136*)
- Young, William
moneyer, 1651–3
(PRO. SP 18/15 no.69; *Answer of the Moniers*)
- Officials responsible for or concerned with the manufacture of tokens or coins in base metal authorised by the Crown*
- Ardington, Arthur
cutter of copper, 1613
(BL. Additional MS 10,112 fo.121v)
- Armstrong, Sir Thomas (d.1662)
assigned a room in the Irish Mint in the Tower, adjoining to the north the workrooms of D. Ramage, for making farthing tokens, 14 Dec. 1660 – revoked, 7 Oct. 1662
(PRO. Mint 1/4 fos 7, 34; *CSPD, 1661–2, 509*)
- Armstrong, Sir Thomas, jun. (1633–84)
grant (with Geo. Legge) to make copper $\frac{1}{2}$ d for Ireland, 1680; subsequently conveyed to (1) John Knox and (2) Roger Moore
(*New History of the Royal Mint. App. 2; The House of Commons, 1660–1690*, edited by B.D. Henning, I (1983), 544–5)
- Auge, —
receiver and auditor, £200 p.a.
24 June 1694–29 Sept. 1695
(PRO. T1/37 no.69)
- Barnes, John
scourer of copper, 1613
(BL. Additional MS 10,113 fo. 121v)
- Barnicle, Thomas
scourer of copper, 1613
(BL. Additional MS 10,113 fo. 121v)
- Bartlett, Benjamin (d.1690)
treasurer, £120 p.a.
25 Mar. 1684–29 Sept. 1688
12 Oct. 1689–24 June 1690
(PRO. AO 1/1662/428, 431–2)
- Barton, Daniel – see Herne, Sir Joseph
- Bayncastle, Richard
preparer of copper, 1613
(BL. Additional MS 10,113 fo. 121v)
- Bedford – see Russell, Lucy
- Bennett, Thomas
cutter of copper, 1613
(BL. Additional MS 10,113 fo. 121v)
- Beser, Richard
surveyor of meltings, £60 p.a.
12 Oct. 1689–27 Feb. 1694
(PRO. AO 1/1662/432–3)
- Bishop, Goodman
scourer of copper, 1613
(BL. Additional MS 10,113 fo. 121v)
- Bowers, George (d.1690)
engraver, £100 p.a.
12 Oct. 1689–Mar. 1690
for his mint office, see above
(PRO. AO 1/1622/432)
- Bradford, William (sen.)
labourer, £15 p.a.

- 20 July 1672–20 Apr. 1673
(PRO. E 351/2122)
- Bradford, William (jun.)
labourer, £15 p.a.
20 July 1672–20 July 1674
porter, £15 p.a.
20 July 1674–20 Apr. 1676
(PRO. E 351/2122–4)
- Bradgate, Martin
employed in farthing token office
1642–3
(PRO. SP 19/88 no.70)
- Briggs, John
surveyor of meltings, £50 p.a.
25 Dec. 1684–29 Sept. 1688
(PRO. AO1/1662/428, 431)
- Brigitt, George
cutter of copper, 1613
(BL. Additional MS 10.113 fo.121v)
- Buckworth, Sir John
commissioner in charge (with Chas Duncombe and
Jas Hoare, sen.), £200 p.a.,
25 Mar. 1684–20 July 1686
for his mint office, see above
(PRO. AO 1/1662/428)
- Burnewood, Oliver
smith, 1613
(BL. Additional MS 10.113 fo. 121v)
- Butler, –
copper cutter, farthing token office, c.1642
(PRO. SP 16/540 no.177)
- Callierig, William
preparer of copper, 1613
(BL. Additional MS. 10.113 fo. 121v)
- Castle, William
teller, £30 p.a.
20 July 1672–20 Apr. 1674
(PRO. E 351/2122–3)
- Cave, Edward
clerk for Crown and lord Harington
1613
(BL. Additional MS 10.113 fo. 121v)
- Chamber, Simon, gent.
issuer of tokens
1613 (Harington), 1617 (Lenox)
see, Garrett, Thos
(BL. Additional MS 10.113 fos 112–13; *Remem-
brancia (of City of London), 1579–1664* (1878), pp.
89–90)
- Chutt, –
?employed in farthing token office
1642/3
(PRO. SP19/88 no.70)
- Clerk, George – see, Herne, Sir Joseph
- Collins, John
distributor, £100 p.a.
20 July 1672–20 July 1676
(PRO. E 351/2122–4)
- Corbett, Andrew
commissioner in charge (with Chas Godolphin/Thos
Povey and Jas Hoare, sen.), £200 p.a.
12 Oct. 1689–24 June 1694
treasurer, £120 p.a.
24 June 1690–24 June 1694
comptroller, £200 p.a.
24 June 1694–24 June 1696
(PRO. AO 1/1622/432–3, T1/37 no.69; *CTB*,
1696–7, 226)
- Couchman, John
issuer of tokens, 1613
(BL. Additional MS 10.113 fos 112–13)
- Crane, Sir Francis (*d.* 26 June 1636)
on Lenox's death (1624) the farthing patent passed
to his widow, Frances, duchess of Richmond and
Lenox and Sir Francis Crane
11 July 1625, above grant confirmed
23 Feb. 1636, grant (with lord Maltravers) to strike
farthings
(*New History of Royal Mint*, App. 2: *DNB*)
- Cronstrom, Abraham, of Stockholm
supplier of copper blanks, 1672–6
his deputies were Jas Birkin, John Everson and
Jacob David
(PRO. E 351/2122–4)
- Cullan, –
employed in farthing token office
c.1643–5
(PRO. SP 19/4 fos 221–2)
- Davies, Henry
teller, £30 p.a.
20 July 1672–20 Apr. 1676
(PRO. E 351/2122–4)
- Davis, –
roller and cutter
c.1694–6
(Ruding, II, 50)
- Denny, Thomas
employed in farthing token office
1642/3
(PRO. SP 19/88 no.70)

- Dodd, —
employed in farthing token office
c.1642–5
(PRO. SP 19/4 fos 221–2; SP 19/88 no.70)
- D'Orville, John
teller and book-keeper, £60 p.a.
25 Dec. 1684–25 Mar. 1686
(PRO. AO1/1622/428)
- Doyley, Thomas
distributor of copper farthings and halfpence, 1676
(PRO. E351/2124; CTB, 1676–9, 1051)
for his other activities see above under officials
- Duke, William
packer, £30 p.a.
20 July 1672–20 Apr. 1676
(PRO. E 351/2122–4)
- Duncombe, Charles
commissioner in charge (with Sir John Buckworth/
Thos Neale and Jas Hoare, sen.), £200 p.a.
25 Mar. 1684–29 Sept. 1688
for his mint office, see above
(PRO. AO 1/1662/428, 431)
- East, James
in charge of farthing token office
c.1642–5
(CSPD, 1625–49, 649; PRO. SP 19/4 fos 221–2, SP
19/88 no.70)
- Etherington, Samuel
teller, £40 p.a.
25 Dec. 1684–29 Sept. 1688
12 Oct. 1689–24 June 1693
(PRO. AO 1/1662/428, 431–3)
- Evans, William
porter, £15 p.a.
20 July 1672–20 Sept. 1673
(PRO. E 351/2122–3)
- Foster, Gabriel
teller, 1613
(BL. Additional MS 10,113 fo.121v)
- Fowles, Thomas
teller, £30 p.a.
20 July 1672–20 Apr. 1676
(PRO. E 351/2122–4)
- French, —
employed in farthing token office
1642/3
(PRO. SP 19/88 no.70)
- Garrett, Thomas, goldsmith of London
licensed, on nomination of duke of Lenox and
countess of Bedford (with Edw. Woodward), to
issue copper tokens, 1616
operates (with Simon Chamber) in Lombard St,
1617
grant, 29 Oct. 1621, to duke of Lenox and marquis
Hamilton of patent to coin farthing tokens, on
determination of former grant to Edw. Woodward
and Thos Garrett, who continue as deputies
(*Remembrancia [of City of London] 1579–1664*
(1878), pp. 89–90; *New History of the Royal Mint*,
App. 2)
- Garrold, William
preparer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Gascoigne, William
preparer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Gibson, Edward
scourer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Godolphin, Charles
commissioner in charge (with Jas Hoare, sen. and
And. Corbett), £200 p.a.
12 Oct. 1689–9 July 1691
(PRO. AO 1/1662/432)
- Haddocke, William
cutter of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Halsey, James
teller, £30 p.a.
20 Apr. 1673–20 Apr. 1676
(PRO. E 351/2123–4)
- Hamilton, James, marquis
grant, 29 Oct. 1621 (with Lenox) to coin farthing
tokens
see also Edw. Woodward and Thos Garrett
(*New History of the Royal Mint*, App. 2)
- Harington, John, first lord Harington of Exton
licensed to issue copper farthings, 10 Apr. 1613
contracted first with Gerard Malynes and Wm
Cockayne, then with Simon Chamber, John
Couchman and Ger. Malynes for production
Harington died 23 Aug. 1613 and in the same month
his son, John, contracted with (1) Chris. Warwick,
Peter Malynes and Samuel Malynes for production,
and (2) Gerard Malynes, Couchman and Chamber
for issuing
on John Harington's death, 27 February 1614, the
patent passed to his mother who surrendered it to
the duke of Lenox who, in turn, engaged Edward
Woodward and Thos Garrett as deputies
(BL. Additional MS 10,113 fos 112–13; *DNB: New
History of the Royal Mint*, App. 2)

- Harris, Henry
engraver (with Jas Roettier), £100 p.a.
1 Apr. 1690–1 July 1691
engraver, £200 p.a.
1 July 1691–1 Apr. 1693
for his mint office, see above
(PRO. AO 1/1622/432–3)
- Harrison, –
copper cutter, farthing token office, c.1642
(PRO. SP 16/540 no.177)
- Harvey, –
supervisor, farthing token office, c.1642–5
(PRO. SP 16/540 no.177; SP 19/4 fos 221–2)
- Hassard (?Fossard), –
employed in farthing token office, c.1643–5
(PRO. SP 19/4 fos 221–2)
- Herne, Sir Joseph (1639–99)
licensed (with Fran. Parry, Geo. Clerk, Abel Slaney, Dan. Barton) to issue copper halfpence and farthings, 1694–
(PRO. Mint 1/5 fos 15–20v)
- Herne, –
? employed in farthing token office
1642/3
(PRO. SP 19/58 no.70)
- Hoare, Charles (son of Jas Hoare, sen.) d.1673
weigher, £80 p.a.
20 July 1672–20 Oct. 1673
(PRO. E 351/2122–3; Burial Registers)
- Hoare, James (sen.)
commissioner in charge, £300 + £40 for his clerk p.a.
20 July 1672–20 July 1676
commissioner in charge (with Sir John Buckworth/Thos Neale and Chas Duncombe), £200 p.a.
25 Mar. 1684–29 Sept. 1688
commissioner in charge (with Chas Godolphin/Thos Povey and And. Corbett), £200 p.a.
12 Oct. 1689–24 June 1694
for his mint office, see above
(PRO. E 351/2122–4; AO 1/1662/428, 431–3)
- Hoare, James (jun.)
weigher, £80 p.a.
20 Oct. 1673–20 Apr. 1676
for his mint office, see above
(PRO. E 351/2123–4)
- Honnyman, Henry
scourer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Horwood, William
scourer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- House, Stephen
preparer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Howard, Henry, lord Maltravers
licensed (with Sir Fra. Crane) to make copper farthings, 1636
grant to him alone to make farthings for use in the plantations, except Maryland, 1639
grant to him alone to make farthings for England, 1639
(*New History of the Royal Mint*, App. 2)
- Howard, Henry
smith, 1613
(BL. Additional MS 10,113 fo.121v)
- Howard, John
master-smith, 1613
(BL. Additional MS 10,113 fo.121v)
- Hunt, Richard
porter, £20 p.a.
25 Mar. 1686–25 Mar. 1687
(PRO. AO1/1662/428)
- Johnson (Jansen), Peter
smith, making puncheons and dies and maintaining the presses, *ld.* per lb. struck
20 July 1672–20 July 1676
for his mint office, see above
(PRO. E 351/2122–4)
- Jones, Benjamin
teller, £40 p.a.
25 Dec. 1684–29 Sept. 1685
(PRO. AO1/1662/428)
- Kippist, William
weigher, farthing token office, c.1642–5
(PRO. SP 16/540 no.177; SP 19/4 fos 221–2)
- Knox, John – see Armstrong, Sir Thomas (jun.)
- Le Blanc, William
weigher, £60 p.a.
20 July 1672–20 Apr. 1676
for his mint office, see above
(PRO. E 351/2122–4)
- Lee, Edward
porter, £20 p.a.
8 Aug. 1692–29 Sept. 1694
(PRO. AO 1/1622/433)
- Legge, George (c.1647–91) – see Armstrong, Sir Thomas (jun.)
- Lenox – see Stuart, Lewis
- Lightfoot, –

- employed in farthing token office, 1642/3
(PRO. SP 19/88 no.70)
- Maltravers – see Howard, Henry
- Malynes, Arthur
keeper of the copper storehouse, 1613
(BL. Additional MS 10.113 fo.121v)
- Malynes, Gerard
issuer of tokens, 1613
(BL. Additional MS 10.113 fos 112–13)
- Malynes, Peter
contracts (with C. Warwick and S. Malynes) to
produce Haringtons
keeper of the counter books
1613
(BL. Additional MS 10.113 fos 112–13, 121v)
- Malynes, Samuel
contracts (with C. Warwick and P. Malynes) to
produce Haringtons
overseer of the workmen
1613
(BL. Additional MS 10.113 fos 112–13, 121v)
- Man, John
teller, £40 p.a.
25 Dec. 1684–24 June 1685
(PRO. AO1/1662/428)
- Marshall, William
forger of copper, 1613
(BL. Additional MS 10.113 fo.121v)
- Maye, –
weigher, farthing token office, c.1642
(PRO. SP 16/540 no.177)
- Miller (with Rawlins), –
easter in farthing token office, 1642/3
(PRO. SP 19/88 no.70)
- Mills, Richard
porter, £18 p.a.
25 Dec. 1684–24 June 1685
(PRO. AO1/1662/428)
- Moore, Joshua
accountant, ?£20 p.a.
1687/8
(PRO. AO1/1662/431)
- Moore, Roger – see Armstrong, Sir Thomas (jun.)
- Neale, Thomas
commissioner in charge (with Chas Duncombe and
Jas Hoare, sen.), £200 p.a.
25 Mar. 1684–29 Sept. 1688
for his mint office, see above
(PRO. AO 1/1662/428, 431)
- Norman, Israel
cutter of copper, 1613
(BL. Additional MS 10.113 fo.121v)
- Palmer, Elias
unspecified duties in connection with manufacture
of tin farthings and halfpence
25 Mar. 1684–25 Mar. 1687
(PRO. AO1/1662/428)
- Parry, Francis – see, Herne, Sir Joseph
- Peirson, –
receiver and auditor, £200 p.a.
29 Sept. 1695–25 Mar. 1696
(PRO. T1/37 no.69)
- Pelter, William
preparer of copper, 1613
(BL. Additional MS 10.113 fo.121v)
- Pendleton, Thomas
book-keeper, c.1694–6
(Ruding, II, 51)
- Plater, Lionel
manager of lord Mowbray's (= Henry, lord Mal-
travers's) farthing token office
?1636–7 Apr. 1643
(PRO. SP 16/540 nos 176–7; *Cal. of the Committee
for Advance of Money, 1642–56*, pp.124–6)
- Povey, Thomas
commissioner in charge (with Jas Hoare, sen. and
And. Corbett), £200 p.a.
10 July 1691–24 June 1694
(PRO. AO 1/1622/433)
- Rawlins (with Miller), –
easter in farthing token office, 1642/3
(PRO. SP 19/88 no.70)
- Redhead, –
melter of tin, £100 p.a.
29 Sept. 1694–25 Mar. 1696
(PRO. T1/37 no.69)
- Rhea, James
porter, £20 p.a.
24 June 1685–25 Mar. 1686
(PRO. AO1/1662/428)
- Richmond and Lenox, duchess – see Crane, Sir
Francis
- Roettier, James
engraver (with Hen. Harris), £100 p.a.
1 Apr. 1690–1 July 1691
and ?1694/6
for his mint office, see above
(PRO. AO 1/1622/432; Ruding, II, 51)

- Roettier, John, Joseph and Philip
engravers and sinkers of dies, $\frac{1}{2}d.$ per lb. struck
20 July 1672–20 July 1676
for their mint offices. see above
(PRO. E 351/2122–4)
- Russell, Lucy, countess of Bedford – see Stuart, Lewis
- Sands, John
cutter of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Saturtwayt, Reynold
forger of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Savicer, Roger
scourer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Scobell, John
engraver, £120 p.a.
August 1684–?29 Sept. 1688
(PRO. AO1/1662/428, 431)
- Scott, Thomas
preparer of copper, 1613
(BL. Additional MS 10,113, fo.121v)
- Serjeant, Ralph
cutter of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Shales, Philip
comptroller
24 June 1696–?
(CTB, 1696–7, 226)
- Shickle, Edward
labourer, £20 p.a.
25 Dec. 1684–?29 Sept. 1688
(PRO. AO1/1662/428, 431)
- Shram, John
preparer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Simmons, David
teller, £40 p.a.
12 Oct. 1689–24 June 1693
(PRO. AO 1/1662/432–3)
- Slaney, Abel – see, Herne, Sir Joseph
- Smith, –
copper cutter, farthing token office, c.1642
(PRO. SP 16/540 no.177)
- Stent, Thomas
teller, £40 p.a.
29 Sept. 1685–?29 Sept. 1688
(PRO. AO1/1662/428, 431)
- Stuart, Lewis, duke of Lenox (*d.*1624)
grant, 29 Oct. 1621, with marquis Hamilton to coin
farthing tokens
on his death the patent passed to his widow,
Frances, duchess of Richmond and Lenox and Sir
Francis Crane
see also, Harington, Edw. Woodward and Garrett
(*New History of the Royal Mint*, App. 2)
- Terrill, Anthony
employed in farthing token office, 1642/3
(PRO. SP 19/88 no.70)
- Treadwell, –
copper cutter, farthing token office, c.1642
(PRO. SP 16/540 no.177)
- Unday (Undry), John
weigher, farthing token office, c.1642–5
(PRO. SP 16/540 no.177; SP19/4 fos 221–2)
- Walford, Samuel
melter, sizer, edger and studder of tin coin, 16s. per
100 lb.
12 Oct. 1689–24 June 1694
(PRO. AO1/1662/432–3)
- Walker, Thomas
porter, £14 p.a.
25 Mar. 1687–24 June 1688
(PRO. AO1/1662/431)
- Warwick, Christopher
contracts (with P. and S. Malynes) to produce
Haringtons, 1613
(BL. Additional MS 10,113 fos 112–13)
- Weddell, Robert
teller, £40 p.a.
12 Oct. 1689–24 June 1693
a Mr Weddell also appears for the project beginning
in 1694
for his mint office. see above
(PRO. AO 1/1662/432–3, T1/37 no.69)
- Weinbesh, Samuel
teller, £30 p.a.
20 July 1672–20 Apr. 1673
(PRO. E 351/2122)
- Wolfe, Richard
preparer of copper, 1613
(BL. Additional MS 10,113 fo.121v)
- Woodward, Edward, goldsmith of London
licensed, on nomination of Lenox and Bedford
(with Thos Garrett), to issue tokens, 1616
grant, 29 Oct. 1621, to duke of Lenox and marquis

Hamilton of patent to coin farthing tokens, on determination of former grant to Edw. Woodward and Thos Garrett, who continue as deputies (*CSPD*, 1611-18, 387; *New History of the Royal Mint*, App. 2)

Wooldridge, Robert
porter, £20 p.a.
12 Oct. 1689-8 Aug. 1692
(PRO. AO 1/1622/433)

CENTRAL OR LOCAL PRODUCTION OF SEVENTEENTH-CENTURY TOKENS

R. H. THOMPSON

Introduction

THE tokens of the seventeenth century were issued in more than four thousand localities of England, Wales and Ireland.¹ They name as their issuers individuals known locally; they refer to trade signs recorded locally; and they give local spellings of place-names. It would have been natural to assume that their production was local also.

Such an assumption might have relied on, and is to some extent realised in various contemporary statements from the period 1650 to 1713, which refer to shopkeepers, chapmen and others, in many parts of England and Ireland, making and uttering their own tokens.² Above all, however, the concept of local production must have been shaped by Samuel Pegge, who stated in 1757 that halfpence and farthings 'were coined by the incorporations of cities and boroughs, by several of the companies there, and by the tradespeople and victuallers, at pleasure, both in them, and in country villages'.³

These statements notwithstanding, the purpose of the present paper is to consider whether the tokens were in reality made locally.⁴ The evidence will be reviewed under three heads: itinerant engravers; London dies and local mints; London mint and localised dies, i.e. dies delivered to an issuer after striking.

Itinerant Engravers

When assumptions about local fabrication were confronted with collections of tokens, it became necessary to take account of similarities between tokens from different areas. The 'similarity of design, both in style, lettering, and device, and a correspondence of mint-marks in the tokens of many adjacent places', led to a hypothesis of local artists who 'travelled on from town to town, something in the manner of the ancient Anglo-Saxon

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¹ In Scotland, which had its own copper coinage, tokens were issued only in Dunbar and Edinburgh, for which see G. C. Williamson, *Trade Tokens issued in the Seventeenth Century* (London, 1889–91), p. 953, and pp. 1423–4 (Uncertain 44). The total derives from the writer's card index of 'Token toponyms' which, including references, comfortably fills five drawers, each of which has a maximum capacity of about a thousand cards.

² Sir J. Craig, 'British coins and coinage', *Journal of the Royal Society of Arts*, 98 no. 4831 (6 October 1950), 946–85 (at p. 965); *Calendar of State Papers, Domestic Series* (henceforth *CSP Dom*), 1651–2, p. 23; *SCBI* 38, Norweb Tokens Part II, p. xii; C. W. Peck, *BMC Copper*, 2nd edn (London, 1964), p. 598; J. Simon, *Essay on Irish coins*, new

edn (Dublin, 1810), pp. 124, 125, 133–4; E. G. H. Kempson, 'Indictments for the coining of tokens in seventeenth-century Wiltshire', *BNJ* 43 (1973), 126–31 (at pp. 127, 128); A. Jouvin, of Rochefort, 'Description of England and Ireland in the 17th century', in *The Antiquarian Repertory*, chiefly compiled by . . . Francis Grose . . . [and others], new edn, iv (London, 1809), pp. 549–622 (at pp. 562–3); Sir W. Dugdale, *The Life, Diary and Correspondence*, edited by William Hamper (London, 1827), p. 130; Williamson, *Trade Tokens*, p. 273; [Increase Mather], *New-England vindicated* (London, 1689), p. 3; J. Evelyn, *Numismata: a discourse of medals* (London, 1697), p. 16; T. Hearne, *Remarks and Collections*, iv, edited by D. W. Rannie (Oxford, 1898), p. 207.

³ S. P[egge], 'A curious account of the origin of tradesmen's tokens', *Gentleman's Magazine*, 27 (1757), 498–9, plate [xix]; title taken from running head. See more on Pegge below.

⁴ A version of this paper was first read at the British Numismatic Society's symposium on the coinage of the seventeenth century held at the University of Aston, Birmingham, on 2 November 1985.

moneyers, designing tokens for the various villages and towns through which they passed'.⁵ This concept of moneyers had been espoused in particular by Archdeacon Pownall, who proposed that the copulative ON meant that a moneyer was only temporarily exercising his office in the particular town, and, as shown by the occurrence of the same name in different towns, accompanied the king from place to place. Before Williamson published his catalogue, Willett had opposed to the theory of itinerant moneyers the few name-identities at adjacent places, and the many names which occur in one place only. The theory was given its quietus by Keary.⁶

It had been incorporated, however, in the introduction to what has remained for a century the standard catalogue of seventeenth-century tokens. In 1908 the British Numismatic Society was assured, probably by W. C. Wells, that 'it was the custom of die-sinkers and engravers of tokens to pass from place to place in pursuit of their calling, and much of the work is so characteristic that experts are able to determine the part of the country to which doubtful types must be allotted'.⁷ This extraordinary skill has not been vouchsafed to successors of these unnamed experts. To the extent that regional variations in seventeenth-century tokens are perceptible, they would now be explained by chronological differences in the spread of tokens to different areas.

In 1921 'Clifford[?] Thompson' (the artist has not been identified) drew an accomplished reconstruction of *Travelling token minters of the 17th century* (pl. 16, 1). It appears to be loosely based on Pegge's account of a press (though not on his illustration of a die), with 'four pieces of good oak, not less than four inches thick, & very strongly dove-tailed together', a stout iron screw of an inch or more diameter, and four nine-inch handles fixed to the top of the screw; with two persons to operate the press; even perhaps with copper being beaten out, or blanks 'commodiously rounded', by the woman near the door. In addition there is a pan on a brazier, presumably to heat the blanks for easier striking (but cold working is normal for coining). This reconstruction is as imaginative as it is imaginary.

In 1963 these peripatetic producers were reduced to 'travelling tin-smiths', who would call upon the tradespeople of the village, town, or county, and offer to strike off any number of pieces; but the tinplate industry was an eighteenth-century development. In 1966 engravers were assumed to have travelled, with David Ramage striking tokens at Bristol, Gloucester and Oxford; but the presence of his initial on the tokens of those cities does not prove that he struck them in the cities. More recently, the identity of punches used for issuers from various towns suggested the existence of itinerant coiners who took their 'simple equipment' from town to town, in a fashion reminiscent of the travelling mints of antiquity; but this model has as little claim to reliability as that of Anglo-Saxon moneyers.⁸

What seems at first sight the most substantial evidence for itinerant engravers is the

⁵ Williamson, p. xxiii [= p. xxi in the 1967 reprint]. He was more circumspect in his *Jottings on the Regal Coinage and Token Currency of Guildford* (London, [1884]), adding notes as to the reappearance of the name of the moneyer 'to test Canon Pownall's opinion ...' (cancellans between pp. 8 and 9). On the very same page xxiii Williamson states also that many tokens were struck in London, and consequently names of both issuers and places 'incorrectly' spelt.

⁶ A. Pownall, 'On some pennies of Henry II found in a hollow stone at Amptill', *NC* n.s., 2 (1862), 233-9, and 'Coins of the Stafford mint', *NC* n.s., 20 (1880), 66-73; E. H. Willett, 'On a hoard of Saxon pennies found in the City of London in 1872', *NC* n.s., 16 (1876), 323-94, 3 pls. (at pp. 327-8, 375-94), and 'On the resident character of the office of monetarius in Saxon times', *NC* 3rd ser., 1 (1881), 32-6; *BMC*

Anglo-Saxon, ii (London, 1893), p. cv. The moving moneyers published since 1970 are exceptions to the accepted norm. K. Jonsson, *The New Era* (Stockholm; London, 1987), p. 183, points out that all three of the die-links between mints in the Reform issue involve moneyers with different names, so ruling out any suggestion of travelling moneyers.

⁷ *BNJ* 5 (1908), 433-4. The authorship of the remarks is not quite certain since three papers were reported together.

⁸ E. King, 'Hampshire 17th-century tokens', reported in *NCirc* 71 (1963), 257; I. C. Thomson, 'Seventeenth-century tokens', *SCMB* (1966), 50-5 (at p. 54); R. G. Doty, 'English merchant tokens', in *Perspectives in Numismatics*, edited by Saul B. Needleman (Chicago, 1986), pp. 147-76, [2] (at p. 151).

following entry in the Bath City Chamberlain's accounts, dated 12 October 1672, and covering income and expenditure for the previous twelve months:⁹

'Item pd Mr Garill for makeing & vending of farthings by composition

20/00/00'

If Garill had vended as well as made the farthings he would clearly have needed to be in Bath. Publishing this entry, Sydenham saw it as of special interest as giving the name of the maker of the 1670 Bath farthings, approved on 7 March of that year. He added the following comments written to him by Williamson: 'Garill was a die sinker in Birmingham, who, I believe, travelled about striking Tokens in many places. I have met with his name in Hull and in Exeter also, and in the latter place there are entries of orders given to him (Garill) for the supply of Tokens'.¹⁰ Williamson's reference to Hull and Exeter is unexplained; his reference to Birmingham is inexplicable.¹¹

The strange word 'composition' Sydenham took to mean that, instead of Garill being paid so much per thousand or by weight, the amount was compounded for by a lump sum. Yet it can refer to more than a debt, and mean the settling of a liability by some mutual arrangement. The entry must in fact record, not a payment for doing something, but a payment for *not* doing something; for John Garill, a common informer who specialised in the prosecution of token issuers, was willing to compound for expenses until forbidden to do so by the Privy Council, which granted pardons in 1671 to a number of towns, among them the City of Bath.¹² The recorded payment to Garill should therefore be understood to have been in compounding for the making and vending of farthings by or for the City of Bath, and not (belatedly) for his making and vending them.

That some seventeenth-century tokens were not made in the place of issue is evident in the following three cases of incorrect legends. Will Bassett, mercer in CAMBRIDGE, is from the same obverse die as Will Bassett, mercer in COWBRIDGE (South Glamorgan), where one William Bassett died about 1680, and another in 1704 whose widow's inventory reveals them to have been mercers; so the CAMBRIDGE reverse must have been prepared in error from misread instructions in a place where Cowbridge was less well known. Secondly, Edward Tomson in the VALE of Lincoln is from a reverse die which was subsequently altered to read BALE of Lincoln, in which state it was again paired with the same obverse; so the VALE reverse must have been sunk in error in circumstances in which The Bail of Lincoln was unfamiliar, and a vale of Lincoln could be supposed to exist. Lastly, William Groves in SHEFFIELD is from the same obverse die as William Groves in SHEFFORD in Bedfordshire (pl. 16, 2–3), so clearly one is wrong; the first may be unique, whereas two out of the three specimens of the second recorded in 1928 were in Bedfordshire, so SHEFFIELD must have been entered in error in some place distant from Shefford. Neither could such a mistake have been easily made in the vicinity of Sheffield, which already was a centre for metal working.¹³

⁹ Bath City Record Office, Chamberlain's Account Roll no. 117, from which a photocopy was kindly supplied by the Bath City Archivist.

¹⁰ S. Sydenham, 'Bath City and traders' tokens issued during the 17th century', *Proceedings of the Bath Natural History and Antiquarian Field Club*, 10 (1905), 423–525 (at pp. 437–9).

¹¹ L. Forrer, *Biographical Dictionary of Medallists, Coin-, Gem-, and Seal-Engravers, Mint-Masters, &c.* (London, 1904–30). That G. C. Williamson was capable of fantasy appears from R. H. Thompson, 'Williamson the man and his books', *SCMB* (1989), 99–102.

¹² Sir John Craig, *The Mint* (Cambridge, 1953), p. 173; see also Kempson, 'Indictments', p. 127.

¹³ D. W. Dykes and K. A. Jacob, 'Two notes on trade tokens: A mythical seventeenth-century halfpenny of Cambridge', *BNJ* 34 (1965), 132–4, and P. Riden, *Cowbridge Trades and Tradesmen 1660–1750* (Cardiff, 1981), pp. 38–40; A. Smith, *A Catalogue of the Town and Trade Tokens of Lincolnshire issued in the Seventeenth Century* (Horncastle, 1931), p. 33, no. 184; *SCBI* 31, Norweb 47 and 48, and D. Hey, *The Rural Metalworkers of the Sheffield Region* (Leicester, 1972). Specimens of the VALE OF LINCOLN reading and of the die-linked piece are in the Usher Gallery. It could be argued in this case that VALE resulted from a mis-hearing in Lincoln; but the other two cases can only be the result of a mis-reading.

These cases argue strongly against travelling engravers. Moreover, support for this hypothesis has often resembled blown straws, to be plucked from windy orations, and the reported proceedings of societies. Not once has it been built into a firmly-argued structure that could withstand the scrutiny of critics. This first hypothesis suffers from a total lack of clear evidence. Itinerant engravers are, to borrow from Rochester, senseless stories, idle tales, dreams, whimsies, and no more.

London Dies and Local Mints

Close examination of seventeenth-century tokens shows that with few exceptions they were struck from dies. The exceptions are mostly castings in lead or pewter, a vernacular technique not confined to any one period; although in addition the Bushey hoard revealed a lead piece, presumably contemporary, which had been squeezed between two die-struck tokens. The dies were sunk from individual punches for the letters and for certain devices such as the arms of Bristol. The existence of so many punches places production of the dies in a large-scale establishment, where alone would it be in any way economic to have quantities of punches available for individual token issuers.¹⁴

Neither would this large-scale establishment have been newly erected. The regular use of the capital letter-form -I- to represent the sounds of modern I and J, and the use of the form -V- to represent U and V, point to a traditional die-cutting workshop, for the modern differentiation according to sound had been usual in printing since the 1620s. The same may be inferred from the initial use of the two letters -VV- to represent W, for Latin, which has no W in its alphabet, was not used for current coins from 1649, the year in which the main series of tokens began.¹⁵

The location of this die-cutting establishment is suggested by the signature 'R' on city tokens of Bristol, Gloucester and Oxford (as mentioned above), also on various private tokens. This identifies a recognisable style of dies, and has been firmly attributed to David Ramage (died 1662), a member of the Company of Moneyers at the Tower mint. The conclusion from all this, and from the similarities between tokens from different areas, must be that the dies of an overwhelming proportion of seventeenth-century tokens were sunk in London.¹⁶

Where, however, were the London-made dies put to use? It would have been possible, in principle, to send them to the issuers for use in their localities, as had happened for coinage

¹⁴ G. Berry and B. Wood, 'A small hoard of seventeenth-century tokens, Bushey, Herts., 1965' *BNJ* 45 (1975), 94-6 (no. 2); *SCBI* 38, Norweb Tokens Part II, p. xx and nos 1457-1503, 1507-12, 1514-83 for Bristol, where the varying positions of the letters and other elements of the design clearly identify their origin in individual punches. For the recurrence of certain other punches see Ashmolean Museum, *Catalogue of Oxfordshire Seventeenth-century Tokens*, edited by J. G. Milne (Oxford, 1935), p. xiv; G. C. Boon, *Welsh Tokens of the Seventeenth Century* (Cardiff, 1973), pp. 27-8, 80; and R. H. Thompson, 'Making before matching', in *Proceedings of the 10th International Congress of Numismatics* edited by I. A. Carradice (London, 1990), pp. 575-81, pl. 57.

¹⁵ R. B. McKerrow, *An Introduction to Bibliography for Literary Students* (Oxford, 1927), pp. 310-12. It would appear that William Munk of Blandford Forum (steward of the almshouses 1654-5, 1655-6, and bailiff 1657) was a

devotee of the reformed spelling, insisting that his surname be written not with -V- but with -U-, which the diesinker, however, could only represent by -II-; *SCBI* 38, Norweb 854-5, and references. For examples of -VV- see Milne, *Oxfordshire*, 180, 188, and *SCBI* 31 and 38, Norweb 186, 231, 919, 1283, 1728, 1753.

¹⁶ For examples of -R- see *SCBI* 31 and 38, Norweb 185-6, 379, 1127; for Ramage see Milne, *Oxfordshire*, pp. xiv-xv. Of the 1,789 different tokens in *SCBI* 31 and 38, Norweb Parts I and II, numbers 70, 647, 812, 1395, 1453a-b, 1504, 1505a-b, and 1506a-b were either cast from moulds, or struck from engraved dies. In addition, two cast pieces have been transferred from Colchester to an Uncertain category, and tokens of Jeffrey Masmore of Wantage, and John Marra of Ashbourne, categorised as Forgeries. Apart from the sixteenth-century square farthings (1444-50), all the remainder, to which are added many duplicates, appear to have been struck from London dies.

(but with rocker-press and rotary-press dies) as recently as the 1640s.¹⁷ Indeed, there have been specific suggestions of local token mints at Huddersfield, Bradford and Sheffield; at The Mint in Rye; at the premises of a brasier cum pewterer in Winchcombe; at an inn called The Old Mint at Southam in Warwickshire; in the West Country for Bridgwater and Taunton; and most recently in Birmingham, 'and one can safely assume that other towns made their contributions to the industry'. From the appearance of John Murrey's 1668 Manx penny tokens 'it seems likely that they were produced in Birmingham', according to Mackay; but 'are much more likely to have been struck on the island from London-engraved dies', according to Dolley.¹⁸ In May 1989 the Keeper of Coins and Medals at the British Museum assured the British Numismatic Society that seventeenth-century tokens must have been struck locally, on the grounds that that is where the dies are found.

Most influentially, Samuel Pegge provided in 1757 a highly circumstantial account of how the affair of coining was managed and conducted by the private tradesman. His fourth paragraph reads as follows.¹⁹

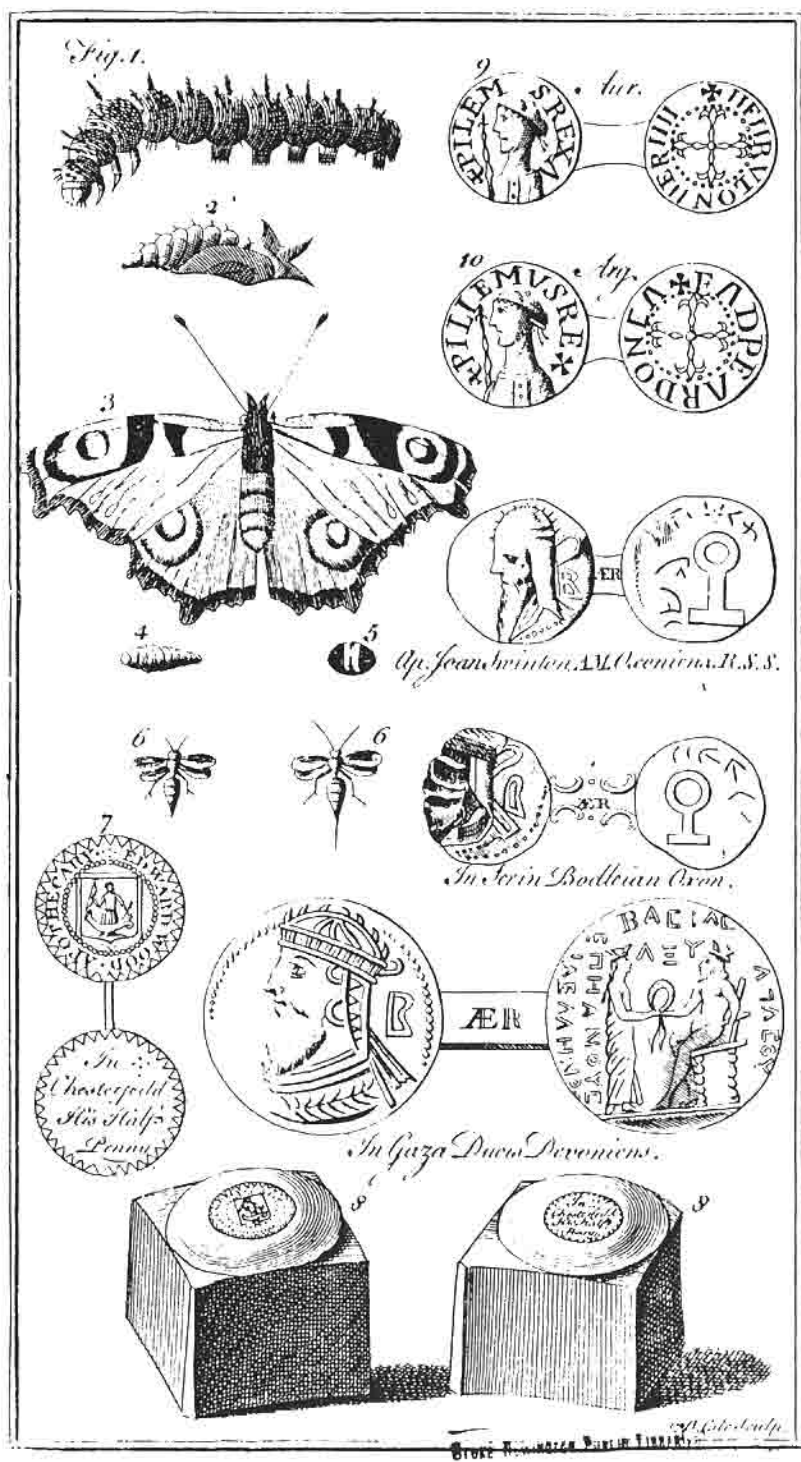
... At the borough of Chesterfield in Derbyshire, Mr Edward Wood, and afterwards his son Richard Wood, who were both of them apothecaries, coin'd money amongst others; and on the death of the late Mr Edward Wood, son of the said Richard, the dies and the press were found in the house, from whence we are enabled to comprehend the whole process, which may be presum'd not to have been very intricate. These Woods coined only halfpennies, and there were two sets of dies, one for the father's, and the other for the son's money, who I suppose had a sett of dies made for himself on his father's decease. They were apothecaries, as was mentioned above, and the device was accordingly Apollo Opifer. These dies I have seen, and by the favour of the gentlemen concern'd, to whom I am greatly oblig'd, one set has fallen into my possession. What I mean by a set is an obverse and reverse; these were cut upon two small pieces of steel, which were afterwards welded upon a larger block of iron, of which the size and the form are expressed in the plate, fig. 8, 8. The press consisted of four pieces of good oak, not less than four inches thick, & very strongly dove-tail'd together. In the upper cross piece was fasten'd an iron box with a female screw, thro' which there passed a stout iron screw of an inch or more diameter, to the bottom of which was fixed one of the dies, whilst the other was received into a square hole made in the bottom cross piece, where it lay very steady as in a proper bed. The screw was wrought by hand, in the manner of a capstan, by means of four handles affixed to the top of it, of about 9 inches long each. And thus, after the copper was reduc'd to a proper thickness, shorn to a size, and commodiously rounded, many hundreds of halfpence might be coined, by two persons, in a very short time, by a man we will suppose to ply the screw, and a woman or boy to put on and take off the pieces. And yet, I assure you, sir, these Chesterfield halfpennies were extremely well struck (see fig. 1, 7).

¹⁷ Thomas Bushell used a rocker-press at Aberystwyth, then Shrewsbury, Oxford, Bristol, and Oxford again, and Sir Richard Vyvyan likewise at Truro and Exeter; the tokens show no evidence of the pinching at two opposite points on the edge which characterised the products of such a press. A rotary press, as used at York, seldom produced designs in a perfect circle, and might result in coins with a turned-down edge, or with portions of two impressions on one side, or coins incompletely cut from the strip (*SCBI* 33, Brooker, Charles I, pp. xxvii–xxxix); the tokens do not exhibit these characteristics, and do have 'curved clips' (see below), which means that the blanks were cut out before striking. None of the known token dies are for a rocker or a rotary press.

¹⁸ *Sketches of Hull Celebrities, or, Memoirs and Correspondence of Alderman Thomas Johnson*, the whole compiled and arranged for publication by William A. Gunnell (Hull, 1876), p. 46, and H. S. Gill, 'Unpublished Yorkshire tokens of the seventeenth century, with contemporary notes', *NC* n.s., 20 (1880), 234–52 (at pp. 242, 245); L. A. Vidler, 'A numismatic history of Rye', *BNJ* 22 part 2 (1936/7), 247–56 (at p. 253); I. E. Gray, 'Some 17th-century token-issuers', *Transactions of the Bristol and Gloucestershire Archaeological Society*, 84 (1965), 101–9 (at p. 105); D. M. Sturley, 'Old Mint', *Daily Telegraph*, 8 April 1970, a reference I owe to Mr John Walker of Reading (the

letter-writer's grandmother had owned the Southam inn, then known as the Horse and Jockey, but renamed The Old Mint after 1936, although 'the only coins that were minted there were 17th-century tradesmen's tokens'). M. B. Mitchiner and others, 'The chemical compositions of English seventeenth-century base metal coins and tokens', *BNJ* 55 (1985), 144–63 (at p. 156); Doty 'English merchant tokens', p. 151; J. A. Mackay, *The Pohjoy Encyclopaedia of Isle of Man Coins and Tokens* (Sutton, Surrey, 1977), p. 14; M. D[olley], review of Mackay, *BNJ* 47 (1977), 150–2 (at p. 151). The Johnson memoirs were comprehensively shown by J. R. Boyle, *A modern literary fraud: the Johnson MSS; a paper read to the members of the Hull Literary Club, 19th December 1892* (Hull, 1893), to be a forgery by John Richardson, with Gunnell as his amanuensis. Gill pretends to have condensed his notes from the published memoirs, but Cyprian Venture, and his tokens minted by Ramsker of Sheffield, do not appear therein; either this was invented by Gill, or it was supplied by C. E. Fewster from the three volumes of Johnson MSS in his possession (Boyle, p. 13), or most likely, Cyprian Venture was produced by Richardson and Gunnell to order (cf. Boyle, pp. 36–7). The catalogue of lots 319 and 322 in *Spink Coin Auctions* 51, 16 April 1986, is perhaps Richardson's latest victim.

¹⁹ Pegge, 'Tradesmen's tokens', p. 499.



This account by Pegge was summarised by Boyne, printed by Williamson to the extent of his comments on the press, and copied in full by Peck, in all cases without the plate which is reproduced here as fig. 1. The scenario of tradesmen obtaining their dies from London for use locally informs Milne's introduction to his Oxfordshire catalogue; and according to Dr Michael Dolley we must allow for the possibility that the die-engravers may also have supplied, as well as dies, standardized blanks which were struck locally in presses of the type described by Pegge.²⁰

Pegge's account, therefore, warrants close attention. 'The dies and the press', he wrote, 'were found in the house'; and 'these dies I have seen', and he illustrated two of them (although Pegge's engraver failed to put the final image in reverse). He made no such statement about the press, and did not illustrate it; so it is permissible to separate his account of the press from his first-hand description of the dies. Pegge was undoubtedly a careful scholar, and of Chesterfield origins; nevertheless, the identity of the press, and its association with the dies, do appear to depend on the report of certain 'gentlemen'. His knowledge of it was second-hand, or third- or fourth-hand if the source of the identification were the 'feeble-minded' Edward Wood. Between the Chesterfield coining-press and Samuel Pegge there is another stage of transmission, and of possible misinterpretation.²¹

It may be observed that Pegge describes no means of separating the upper die from the rotation of the screw, a necessity if coin impressions are not to be blurred. The squeezing motion which four handles would impart means that this was not a coining-press in the classification of presses.²² Pegge's suggestion of many hundreds of halfpence 'in a very short time' would need to be understood very flexibly, for such a press would have been slow to operate; the rate of production (depending on the pitch of the screw) could hardly have exceeded two pieces per minute.

I rely here on the advice of Mr David Sellwood, who has also sought to reproduce the essentials of the press described by Pegge. A nut was held in a vice; a three-quarter-inch screw through the nut was turned by a nine-inch spanner, on which the force of two hands pushing or pulling was estimated to be approximately equal to the force on two handles of one hand pushing and one hand pulling; below the screw two bars of mild steel punched with simple designs represented the dies; and between these bars blanks 15-millimetres in diameter of cast and annealed aluminium were selected as approximating to the hardness of copper. It proved hard to turn the screw with only a nine-inch purchase, and the resulting impressions were weak and unsatisfactory. The experiment was not, however, conclusive either way.

Other doubts arise over Pegge's account. As can be seen (pl. 16, 5), blanks were not 'shorn to a size, and commodiously rounded', but cut out in a single operation with circular cutters. Moreover, the Richard Wood dies, as may be seen from his token (pl. 16, 4), neither claimed to be for a halfpenny, nor bore the device of Apollo; and since the token can be dated to the 1650s, the issuer did not follow but preceded Edward Wood. It may be attributed to the Richard Wood who died in 1659, father of Edward (died 1700), whose son

²⁰ W. Boyne, *Tokens issued in the Seventeenth Century* (London, 1858), p. xii; Williamson, p. xlv; *BMC Copper*, pp. 581–2; Milne, *Oxfordshire*, p. xvi (three issuers 'struck from dies . . .', dies were 'used in Oxfordshire . . .', issuers had inferior dies made 'for striking . . .'); M. Dolley, 'An unpublished seventeenth-century token halfpenny of London', *BNJ* 28 part 3 (1957), 659–61, his preceding words being 'the fabric of tokens of identical style is so homogeneous that one would be tempted to assume that they were not struck by individual tradesmen, but . . .'. In February 1959 he referred to 'the centralisation of the cutting of the token dies, although the tokens themselves were made

locally', *NCirc* 67 (1959), 100.

²¹ Mr Ernest Danson has kindly reported Mrs Rosemary Milward's findings that Wood wills, and inventories of their establishment, neither itemise the dies nor mention (more difficult to overlook) a press. For their references, and the description of Edward Wood, see T.D. Whittet, 'Derbyshire apothecaries' tokens and their issuers', *Derbyshire Archaeological Journal*, 108 (1988), 66–76 (at pp. 71–2, 76).

²² D. R. Cooper, *The Art and Craft of Coinmaking* (London, 1988), pp. 45–60; O. Smith, *Press-working of metals* (New York, 1896), pp. 223–32.

Richard (dead by 1715) was not born until 1657; it was the second Richard's 'feeble-minded' son Edward who died in 1757 shortly before Pegge wrote.²³

Sufficient difficulties are raised by Pegge's description of a press for everything he wrote about it to be considered, if other evidence requires it, a misconception. For example, at the Wood house, where three generations had been apothecaries, there might have been an oil press 'for the drawing of oyles by pressure out of any sort of ingredient', or a tincture press for expressing the alcohol from vegetable tissues.²⁴ The only other report of a token press, apparently, comes from the premises in Kendal of Thomas Sandes, a cloth merchant and token issuer, where what were identified as two coining presses and other instruments of his 'mint' had been found 'a few years ago' in 1832; no further details seem to be available, except that twenty years later their location was unknown.²⁵ Nicholson was clearly aware of Pegge's account, indeed his general remarks on tokens copy those of Pegge almost word for word. His identification of coining presses may have no greater independence.

Indeed, the technical requirements of coining really put Pegge's press beyond serious consideration as one designed for coining. His plate illustrates Edward Wood's two dies on square bodies, which are entirely typical of the token dies which survive; and such dies are for mounting in a screw press. Appropriately he allows for an iron screw; yet long metal screws at that period had to be laboriously cut with chisel or file, and were consequently more expensive than the economics of token production are likely to have supported, even if these supposed local mints were in towns rather than every village. Moreover, the heavy blow needed for coining (less, admittedly, for small coins), and the high torque transmitted from the suddenly-arrested lever to the base of the press, required both a screw and a frame of the strongest materials available, already bronze or wrought iron in the sixteenth century.²⁶ A capstan-type press with its squeezing motion, and a frame of wood, are just not credible. A wooden-framed press would have sufficed only to flatten cloth, to press cheeses, to imprint paper, or to crush fruit.

In the Borough of Marlborough Chamberlain's Accounts for 1669-70 appears the following entry:

£ s. d.

Pd for bringing the Last farthinges

Barrel Letter paper and threed and mendinge of one of the Engines

10 10

Mr E. G. H. Kempson understood this engine to be a home-made press for stamping tokens locally, the 'farthinges' being farthing blanks transported in the barrel. It is possible, however, to see the farthings and engines as separate items, connected only through having been transacted together on the same visit to London. The engines could be fire engines, like the 'engine to quench fire' which Gloucester ordered from London in 1648, Reading in

²³ Whittet, 'Derbyshire', pp. 69-72. One may suppose the Richard Wood dies to have been more cursorily examined or less fully recorded than the set possessed and engraved by Pegge. As an alternative explanation, Dr Juanita Burnby tells me that at the relevant period there was in Chesterfield at least one other Richard Wood, who might have been the issuer of the known token, especially in view of its lack of allusion to apothecaries.

²⁴ R. Holme, *The Academy of Armory* (Chester, 1688), Book III, Chapter xi, paragraphs xiv-xv, for an oil press. A screw-press appears in the background of 'Der Olmacher' in H. Sachs, *Eygentliche Beschreibung aller Stände auff Erden* (Frankfurt am Main, 1568), sig. c.ii; reprinted as p. 106 of J. Amman & H. Sachs, *The Book of Trades* (New York, 1973).

The mention of a tincture press is due to Dr Whittet, who informed me in 1985 that they would be the only type of press common in seventeenth-century apothecaries' shops.

²⁵ C. Nicholson, *The Annals of Kendal* (Kendal, 1832), pp. 107-9; W. H. Brockett, *The Tradesmen's Tokens (of the 17th century) of Cumberland and Westmorland* (Gateshead, 1853), p. 6.

²⁶ R. H. Thompson, 'Mechanisation at the seventeenth-century London mint: the testimony of tokens', in *Metallurgy in Numismatics*, 3 (forthcoming); A. P. Usher, 'Machines and mechanisms', in *A History of Technology*, edited by Charles Singer [and others], iii (Oxford, 1957), pp. 324-46 (at pp. 336, 338); Cooper, *Coinmaking*, p. 81.

1665, and Norwich in 1679. That this is indeed the correct explanation Mr Kempson accepted in 1985, after finding references to engines in the Chamberlain's Accounts back to 1649, the Marlborough Farthings being all dated 1668. They included in 1650 a payment 'To Mr Hunt for the engine and carriage . . . £32', which bears comparison with the London-made *Engine*, a word which 'use in this City hath confined to signifie that which is used to quench Scare-fires therein . . . William Burroughs City Founder . . . hath made about threescore of these Engines for City and Country . . . the price thereof [may] be compassed for thirty five pounds'.²⁷

Local token mints would have required not only presses but also supplies of blanks. Yet certain specimens lack a segment from their circumference which is cut along the arc of another circle of the same size (pl. 16, 5), thus showing that the blanks were cut out from a rolled-out sheet of metal by means of a circular cutter; the helpful American term is 'curved clip'. Moreover, the evidence of Bristol farthings is that the blanks for at least these town pieces were made to a standard weight, the standard lying in the number to be struck from a pound of the metal.²⁸ Further, certain tokens incorporate plugs of a different metal (pl. 16, 6), just as did various Commonwealth patterns as a precaution against counterfeiting.

The production of blanks, therefore, used more sophisticated equipment, methods, and controls than many localities are likely to have had available. Moreover, these are expensive: melting, rolling, and blank-cutting are the most capital-intensive operations of a modern mint.²⁹ Published analyses provide little support for the localised or regional production of blanks: tokens of pure copper came from Cambridge, Devon, Gloucester, Kent, London & Middlesex, Norfolk, Somerset, Suffolk and Warwickshire (Coventry); low zinc brass from Bristol, Gloucester, Kent, London & Middlesex, Norfolk and Oxfordshire; standard calamine brass from Kent, London and Surrey; higher zinc brass from Norfolk and Somerset; and high zinc brass from Somerset.³⁰ To suppose that not only dies but blanks also (and presses?) were supplied from London for unskilled local striking seems an extravagant notion, and a tactical nonsense. Neither do the differing metals point to different mints, for they occur with the same pairs of dies. The hypothesis of London dies and local mints looks quite improbable, with little real support and much against it. Better to turn to the third hypothesis.

London Mint and Localised Dies

It has been established that the dies for the seventeenth-century tokens were normally made in London, and that the supposed evidence for their use locally does not really stand up. They were normally struck on well-made blanks cut from sheet metal by circular cutters; they were struck with the die faces properly held in the same plane; obverse and reverse dies appear to have been physically inter-changeable, yet never to have been interchanged. The evidence of die axis in particular argues strongly against local striking as the normal method

²⁷ E. G. H. Kempson, 'The Marlborough token coinage of the 17th century', *Report of the Marlborough College Natural History Society*, no. 101 (1961), 31–45 (at pp. 33, 35); Gloucestershire Record Office, 1377/1452; City of Gloucester Minutes 1632–56, p. 447; Royal Commission on Historical Manuscripts, *Eleventh Report, Appendix, Part VII* (London, 1888), p. 196 (for Reading); *Depositions taken before the Mayor & Aldermen of Norwich, 1549–1567, [and], Extracts from the Court Books of the City of Norwich, 1666–1688*, edited by Walter Rye (Norwich, 1905), p. 153; T. Fuller, *The History of the Worthies of England* (London, 1662), Part II, London, p. 191. Even closer to Marlborough's costs was Hertford's 1684 payment of £1 to 'the man that

came downe with the Engine' from London, and £31 for 'the Inge itself'; G. V. Blackstone, *A History of the British Fire Service* (London, 1957), p. 51, see also pp. 26–9.

²⁸ Other examples of 'curved clips' are SCBI 31 and 38, Norweb 94, 431, 470, 930, 1020, 1088, and 1725. For Bristol see SCBI 38, Norweb Tokens Part II, pp. xxvi–xxxii.

²⁹ For example, at the end of 1967 in the Operative Department at Tower Hill 58 were employed on melting and 233 on rolling, cutting, annealing and marking, against 157 on the actual coining. *Royal Mint Annual Report*, 99 (1968), p. 30.

³⁰ Mitchiner, 'Chemical compositions', pp. 148–56.

of production. Dies with square bodies are capable of being placed in four different relative positions. While issues not infrequently exhibit two die axes, they seldom exhibit more; and many exhibit a consistent axis on every specimen examined, for example John Gaynes of Olney, Bucks., with forty-three specimens all at 180°. ³¹

The best case is that of the Bristol farthings dated 1652–62. Two die-pairings exhibit two different axes, showing that variation was technically possible; but 124 die-pairings exhibit a single consistent axis, although as many as seventy-eight die-duplicates have been examined. Thus, great care and consistency were exercised in the use of the dies, such as a professional establishment would provide. ³² One may conclude that where the dies were sunk from punches, where there was the equipment for rolling out metal and cutting out circular blanks, where there was the skilled personnel, there also were these tokens struck: at the Mint in the Tower of London.

Once an issuer's tokens had been struck off, what was to be done with the dies? It is evident from the tokens themselves that dies were not necessarily destroyed or re-cycled, and that an issuer sometimes returned a decade or more later for a repeat order which employed one old die and a new one by a different diesinker. ³³ Moreover, there is occasionally a die-link between successive proprietors of the one establishment, as at the sign of The Leopoldus in Dover (pl. 16, 7–8), where the same obverse die was used with a 1651 reverse bearing the initials D|CM, and a 1666 reverse bearing the initials F|GM. There are really only two places in which such dies might have been stored: with the issuer, or at the Mint.

In 1650 the view was that it should be treason to make farthings anywhere but in the Mint; and in 1652, that if tools used in making copper farthings were kept by private persons, it would be impossible to prevent counterfeiting. It seems likely, therefore, that the Mint, or rather the moneyers, were prepared to store token dies and retrieve them on demand, despite the problems of warehousing. In the absence of token dies surviving in the Mint to the present it may be impossible to prove that this happened. Consider, however, current practice at the Rijks Munt, Utrecht. Tens of thousands of dies are stored and readily retrieved for the same private contractor; if a proprietor insists on taking his dies he can (they are first made unusable if they bear the mint master's privy mark), but for a repeat order he must pay as though for new dies, on the grounds that the Mint does not know in what conditions the dies have been kept. ³⁴

This alternative of dies delivered to an issuer, or as one might say, localised, can be hypothesised for seventeenth-century tokens also. As early as 1651/2 a cost for dies was identified to an issuer of tokens attributable to Ramage (pl. 16, 9): 'Brasse Tokens & for a Box to put them in & Two steele stamps 18s. 2d.' Other examples are Gloucester's 1656–7 payment for the 'Stampe' for the City farthings, and Marlborough's 1668–9 payment for the 'Stampes'. Knowing that the cost of his tokens included a charge for dies, an issuer may well have felt the right to receive any dies which remained serviceable. Having been paid for, they could be considered his property; and inasmuch as they might be used again, they had a value. Conceivably this might have been an option available for a small extra charge, but more likely not. That it was an option is evident from Norwich. On 28 September 1667 the

³¹ G. Berry and P. Morley, 'A revised survey of the seventeenth-century tokens of Buckinghamshire', *BNJ* 43 (1973), 96–125, pls. iii–iv (at p. 115, no. 147).

³² *SCBI* 38, *Norweb Tokens Part II*, pp. xvii–xxiv. This care and consistency remains true even after the recognition of occasional 'spotting' on dies to facilitate (but not compel) a consistent axis, for which see Thompson, 'Mechanisation'. This paper also discusses rollers, cutters, and presses for tokens.

³³ e.g. *SCBI* 31 and 38, *Norweb* 90, 271–272, 500, 855–856, 908, 1188, and 1779.

³⁴ *CSP Dom.* 1650, p. 182, and 1651–2, p. 238; *Catalogue of the Coins, Tokens, Medals, Dies and Seals in the Museum of the Royal Mint*, by William John Hocking (London, 1906–10); Dr A. A. J. Scheffers of the Rijks Munt Museum, Utrecht, pers. comm., 10 Sept. 1988. Similarly the Royal Mint at Llantrisant stores medal dies (and the necessary master tools) for future use, although a private client may on request take what are his property; for a repeat order no special charge relating to the dies is made unless they require replacement or substantial renovation (Mr Graham Dyer, pers. comm., 30 August 1989).

Corporation desired Christopher Jay, MP, when next in London, to advise about coining farthings; on 14 November he was requested to send for two hundredweight of farthings, and to 'take care that the stamp of the said farthings be sent down'.³⁵

So it is that a 1667 Gloucester die survives in Gloucester, with wax impressions from Gloucester dies of 1654 and 1669. Pegge illustrated two Chesterfield dies found in Chesterfield. Two 1666 obverses of a Rickmansworth issuer were (and are understood to be still) in the possession of descendants. Kendal dies of 1667 were found in Kendal. A 1669 Pulborough die was found in Pulborough. Dies for the Henley on Thames 1669 halfpence and farthings are still in the possession of that or a successor corporation; and the 1670 Beccles Farthing dies survive in Beccles. A 1670 die known to be the reverse for Thomas Dawson in Leeds was in Thoresby's museum at Leeds.³⁶

The survival of dies lacking any known association with the place of issue may also be noted. A pair of dies for Kinton are preserved in the Ashmolean Museum. Dies for the Stourbridge halfpenny, and for Francis Waterman of Faversham, were in an early nineteenth-century sale. A reverse die naming Bristow Place, Chippenham (Williamson, Wiltshire 47), and the reverse die for Christopher Simson in York, were in the British Museum from 1865, but sadly must have been lost in the war-time destruction. The 1657 reverse die for Thomas Brinkwell of Foxearth in Essex survived long enough to be struck on a William and Mary halfpenny, and the pair of 1668 dies for John Hoopes of York long enough to be struck on worn William III halfpence.³⁷

Tokens struck onto other tokens do not really amount to evidence of local striking, which was Boon's conclusion in the case of a 1668 Abergele penny overstruck on a 1669 penny from Corwen, about thirty miles away. The overstrike is well centred, with both die faces properly held in the same plane, and it looks professionally struck; overtype and, apparently, undertype (the illustrated specimen is much worn) fall within the same Preston-Morley & Pegg group K; and the overstrike could be attributed to confusion at a central minting-place if two issuers ordering at about the same time differed in how they dated their forthcoming issues. This explanation is particularly compelling in the light of an overstrike the other way around, Corwen over Abergele, which Mr Boon was shown by Mr Roger Shuttleworth in 1979. Further support may be found when other overstrikes are properly published, for example John Stewart of Belfast, 1657, on a City of Wells token of the same date.³⁸

³⁵ *Churchwardens' Accounts of S. Edmund & S. Thomas, Sarum, 1443-1702, with other documents*, [edited] by Henry James Fowle Swayne (Salisbury, 1896), p. 225, a reference I owe to Mr E. G. H. Kempson; R. H. Thompson, 'Gloucester farthings, 1657-1662', *BNJ* 45 (1975), 77-91, pl. vii (at p. 84); Kempson, 'Marlborough', p. 34; Williamson, p. 868.

³⁶ Owen Parsons on behalf of Gloucester City Museum, 'Exhibitions', *BNJ* 29 part 2 (1959), 430-1; J. L. Wetton, *Seventeenth Century Tradesmen's Tokens* (Newcastle upon Tyne, 1969), p. 33, for an illustration of the 1667 Gloucester die; Williamson, p. 322, for Rickmansworth, and inf. Mr Peter Preston-Morley; Brockett, *Cumberland and Westmorland*, p. 8, for Kendal; J. Lowe-Warren, *Sussex Tokens* (London, 1888), p. 9, for Pulborough (perhaps a pair of dies); Thompson, 'Mechanisation', for Henley and Beccles; R. Thoresby, *Ducatus Leodiensis*, 2nd edn (Leeds and Wakefield, 1816), 'Musaeum Thoresbyanum: a catalogue and description of the natural and artificial rarities', p. 52.

³⁷ Milne, *Oxfordshire*, p. xvii; Leigh, Sotheby & Son, 2-6 May 1803, *A catalogue of the . . . collection . . . of the late George Hollington Barker, Esq., of Birmingham* [London, 1803], p. 20, lot 391, a reference I owe to Mr P. Preston-

Morley; Catalogue of Dies in British Museum, [by D. F.] Allen, [193-] (British Museum, Department of Coins and Medals, ms.), 192bis, 193, their diameters [sc. of the striking face] being recorded as .68 and .8 [inches] respectively, and their measurements as 1.7 sq[ua]re \times 1.2, and 1.6 sq. \times 1.6; W. Gilbert, [A coin of Zenobia; an overstruck halfpenny], *NC* 5th ser. 6 (1926), Proceedings, 7; Williamson, Yorkshire 401 and note, and Glendining & Co., 6 March 1974, *Catalogue of important Scottish Gold Coins . . . Yorkshire Tokens . . . [etc.]* [London, 1974], p. 70, lot 286.

³⁸ G.C. Boon, 'An overstruck seventeenth-century token of Abergele (Denbs.)', *SCMB* (1970), 268-9, and *Welsh Tokens of the Seventeenth Century* (Cardiff, 1973), pp. 83, 102; P. Preston-Morley and H. Pegg, 'A revised survey of the seventeenth-century tokens of Nottinghamshire', *BNJ* 51 (1981), 134-96, pls. xvi-xxiii (at pp. 172-3, pls. xx-xxi [= pp. 39-40, pls. 5-6 in the reprint]); W. A. Seaby, 'A bond for issuers of Youghal tokens', *Journal of the Royal Society of Antiquaries of Ireland*, 101 part 2 (1971), 161-3 (at note 10). See now M. J. Dickinson and R. H. Thompson, 'Three seventeenth-century tokens overstruck on others', *NCirc* 97 (1989), 325-6.

Alternatively, to economise on the cost of blanks in the event of a re-issue, dies if held locally might have been sent up to the Mint accompanied by the token stock of another issuer who had failed or died, or by any accumulation of tokens which a tradesman could not hope to return to their distant issuers. The average distance people travelled to market in England and Wales as a whole was seven miles; so that in seventeenth-century terms Abergele to Corwen was far, as were the localities involved in the comparable case of a 1664 Southampton token overstruck on a 1665(?) token of Ringwood, about twenty-five miles distant via Romsey and the New Forest.³⁹

It has to be accepted, however, that with dies held locally some attempt might have been made to use them locally. Often there must have been one die only (whence die-links between the work of different diesinkers). When there was a pair, the difficulty of substituting for the four-screw chucks which held the square dies, the absence of appropriate iron presses to provide sufficient force, and the problems of acquiring a supply of suitable blanks, are likely to have resulted in the sort of object shown in **pl. 16, 10**. The same London dies as in **pl. 16, 9** have been applied to a mis-shapen disc of pewter, with the impressions only partly registered. The case of the Salisbury St Edmund communion token suggests, incidentally, that the specific mention of dies in local records may be evidence of the receipt of dies locally.

Conclusion, and Documentary Support

The striking of tokens in London and subsequent localisation of the dies is the hypothesis which best reconciles both documentary evidence and the physical evidence of the main series of tokens. This judgment needs to be qualified in respect of Ireland, where local styles of diesinking appear beside London styles, and token manufacture has been documented in Dublin and Waterford.⁴⁰ Nevertheless, in England and Wales, only a handful of seventeenth-century tokens are not of a London style. If there were small-scale local operations, perhaps casting from moulds, perhaps hand-striking from engraved dies, they have still to be substantiated.

Once the essential correctness of the third hypothesis is accepted, various documentary references are seen to support it. In 1656–7 Gloucester paid on account of its farthings 'for cariedge postage of them and about them'; so those Gloucester farthings were evidently not struck in Gloucester, where a later Gloucester farthing die yet survives. Marlborough, similarly, paid for carriage of farthings on four occasions between 1668–9 and 1671–2; and Sherborne's 'Account for the Farthings' includes three payments for 'carriage' between 1669 and 1672, and one for 'Cariage of the Farthings'.⁴¹

Certain records relating to the production of tokens specifically mention London. Salisbury City Council decided in 1658 that 'Mr William Stone and Mr James Heely doe nowe in London take course for stamping of Five pounds worth of farthings'. Grantham in 1667 ordered that the Chamberlain 'do send to London for brass half-pence'; and Stamford Corporation, referring in 1668 to the town halfpence 'lately come from London', agreed that the mayor 'shall send the moneys agayne to London for more halfe penys'. Wisbech in 1668 ordered the town bailiff 'to lay oute five or ten pounds in farthings at London'. In Lincoln in 1669 it was 'ordered and agreed upon that one stamp . . . shall be forthwith

³⁹ A. Everitt, 'The marketing of agricultural produce', in *The Agrarian History of England and Wales*, iv, edited by Joan Thirsk (Cambridge, 1967), pp. 466–592 (at pp. 498–9); D. P. White, 'A Hampshire seventeenth-century token overstrike', *Bulletin – Token Corresponding Society*, 1 (1971–3), 138–9.

⁴⁰ C. Gallagher, 'Post-Restoration Irish tokens: a documentary perspective', *British & Irish Tokens Journal*, 1 (1980), 11–28 (at pp. 17, 19).

⁴¹ Thompson, 'Gloucester farthings', p. 84; Kempson, 'Marlborough', pp. 34–5; Maureen Weinstock, *Studies in Dorset History* (Dorchester, 1953), pp. 57–9.

provided and gotten, and so many halfpennies stamped therewith as twenty pounds will purchase', which the sheriffs were to pay to the mayor 'as soon as they can get them from London'. In 1670 the Norwich mayor, aldermen etc. sought pardon for having 'sent to London and had some farthings coined for them', and the Great Yarmouth bailiffs etc. for vending and exchanging halfpence and farthings: 'They sent for some to London'.⁴²

These references are confined to tokens issued by corporations, but it is from corporations, of course, that almost all first-hand evidence of token-issuing survives; and the private and corporate issues are of identical fabric. The Oxford chandler whom Hearne interviewed to so little effect might be expected to have had more than a vague memory of 'Coyning' if he had been obliged to set up and learn to use a screw press.⁴³ The other contemporary statements mentioned at the beginning may be understood either to have been ignorant of the real circumstances, or to mean that tradesmen *caused* farthings to be minted, a possibility for which, indeed, some of the statements allow.⁴⁴

It is allowed also by the 1672 proclamation against the tokens which, while referring to their issuers as 'makers' and 'private stampers', starts by charging that 'several Persons and Corporations . . . have presumed to *cause* certain pieces . . . to be stamped with their private stamps'. The allowance of this possibility while tokens were still being produced is itself significant. Moreover, an order in council and a further proclamation in 1674 inveighed against those who were continuing to utter and use tokens, not against anyone who was continuing to make them. Most of those who had made tokens must by then have been engaged in producing his majesty's farthings and halfpence of copper; although references in 1660 to 'Presses for making Farthings . . . about London', and to implements of coining openly sold, indicate that there may have been production in London outside as well as inside the Mint. Again, in 1672 it was represented to the Privy Council that 'several presses &c. for coining are known to be in several parts of London, Middlesex and Surrey'.⁴⁵ Any products of such extramural activities have yet to be identified; they may well have been isolated episodes, suppressed as soon as they occurred.

The lack of even an incidental mention in the Mint records may cause surprise, but the tokens must have been private business for the moneyers, the members of that *soi-disant* corporation whose last provost in 1848 took its records from the Mint, never more to be seen.⁴⁶ In fact one document does appear to provide evidence for the production of tokens specifically in the Mint. A certain James Yard(?) from Amsterdam offered Sir Robert Stone in 1652 an opinion on the problems of the English mint which includes the following:⁴⁷

And we hear – I pray enquire the truth of it – that your mint in the Tower of London is come to such contempt, where you were wont to coin forty thousand pounds a week and above twenty thousand pounds a week constantly in gold and silver, there is not so much coined in a year as was within this five year coined in a week, and that now your coin in your mint [is] nothing almost but counters and farthings. If it should be true, which I

⁴² C. M. Rowe, *Salisbury's Local Coinage* (Salisbury, 1966), p. 75; J. Simpson, *A List of the Lincolnshire Series of Tradesmen's Tokens & Town Pieces of the Seventeenth Century* (London, [1872]), pp. 24, 46; Boyne, *Seventeenth Century*, p. 30; Smith, *Lincolnshire*, p. 25; *CSP Dom. 1670*, pp. 447: 562.

⁴³ Hearne, *Remarks and Collections*, iv, 207.

⁴⁴ Kempson, 'Indictments', pp. 127, 128; Williamson, p. 273.

⁴⁵ *By the King a Proclamation for making current his Majesty's Farthings and Halfpence of Copper and forbidding all others to be used* (Whitehall, 1672), emphasis supplied, the text being most conveniently available in Williamson, pp. xxi–xxii. *BMC Copper*, pp. 605–6, or *Seventeenth-Century Economic Documents*, edited by Joan Thirsk and J. P.

Cooper (Oxford, 1972), pp. 680–1; *BMC Copper*, pp. 606–7. For the order and proclamation, it being at the same time reiterated that making was an offence: H. W. Henfrey, *Numismata Cromwelliana* (London, 1877), p. 158, and *CSP Dom. 1660–1*, p. 307; *CSP Dom. 1672*, p. 283. What was being coined is not specified, but in seizing 'the said coiners with their presses and counterfeit coin, the messengers employed [were] to take the assistance and directions of Mr Garroll herein', i.e. John Garill the prosecutor of token issuers (Craig, *The Mint*, p. 173). Craig adds that the warden of the Mint was ordered to seek out and destroy all private presses.

⁴⁶ M. Lewis, *Ancestors* (London, 1966), pp. 189–200.

⁴⁷ Thirsk and Cooper, *Seventeenth-Century Economic Documents*, pp. 644–5.

pray enquire the thing out, it is a high dishonour to the nation in so sacred a place as the mint is, to coin nothing but counters and farthings and in so famous a mint as the Tower of London. For the honour of the nation, use your interest to let their mint not be employed rather than suffer such trumpery as counters or farthings to be made within the walls.

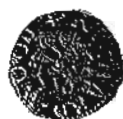
Evidently the moneyers preferred to be employed, even on such 'trumpery' as farthings, a word which must mean tokens.

Illustrations (pl. 16)

1. *Travelling Token Minters of the 17th Century*, signed 'CLIFFORD THOMPSON | 1921' (the L of CLIFFORD is large and superimposed on the C, so that the name might possibly be 'C. [or G.] Lifford', or 'Gifford L.'): pen and ink drawing, 10½ x 6¾ ins. = 26½ x 17 cm.; seen on sale in The Hague in 1981, and purchased by Mr Philip Greenall, who has kindly permitted reproduction of it here.
- 2-3. *Obv.* WILLIAM GROVES around Grocers' Arms (but five cloves only in chief), same *obv.* die, reverses, -IN-SHEFFIELD around ♂-1666-♂, and -IN-SHEFFORD around ♂-1666-♂; Norweb 47 and 48; Norweb specimens.
4. *Obv.* RICHARD WOOD around three woodmen walking left in fess bearing staffs or similar, accompanied by a dog, *rev.* -OF-CHESTERFEILD around R-W; Williamson, Derbyshire 48; British Museum specimen.
5. 'Curved clip': *Obv.* THE ARMES OF BRISTOLL around a castle, right, and issuing therefrom a ship, sails spread and flags flying on mainmast and foremast, *rev.* -A-BRISTOLL-FARTHING around C-B 1652-R; as SCBI 38, Norweb 1494; R. 11. Thompson specimen.
6. *Obv.* SIMON TURNER NEXT around Grocers' Arms, *rev.* THE PIE AT ALGATE around magpie left, in chief 1^D; Williamson, London 68; Norweb Collection. Brass with central plug missing (plug of copper in a second specimen).
- 7-8. *Obv.* AT THE LEOPVLDS around half-length figure of St Leopold of Austria holding staff, crown beside, same *obv.* die, *rev.* -IN DOVER-1651 around -D-C-M., and -IN DOVER-1666 around -F-G-M.; Williamson, Kent 210 and 211; British Museum specimens.
9. *Obv.* EDM-AN-SARVIM-1651 around skull, *rev.* -E-TIOV-BELFIVEST around heart; Williamson, Wiltshire 202 but EDM (no stops between); Devizes Museum specimen.
10. Same dies as fig. 9 struck on lead or pewter; British Museum specimen.



1

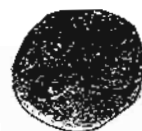


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SHORT ARTICLES AND NOTES

AN ADDITION TO THE COINAGE OF BERGERAC

B. J. COOK

ALL the coins issued by Henry of Lancaster as lord of Bergerac are rare.¹ Some are known by single specimens, to which group can now be added another. The piece in question is in fact a fragment, apparently a cut or broken half of a coin, but which also seems to have had an outer circle of legend and design removed, making it little more than a third of the original piece. Yet enough survives to make the addition of another type to the Bergerac series probable.

The coin surfaced among a small collection of late medieval pieces sent to the British Museum for identification by Mr A. Cherry of Bournemouth. Mr Cherry has most generously donated the piece to the British Museum.

The details of the coin are as follows (pl. 19, 1).

Obv.: ()/LA/NCE

Long cross dividing legend, three pellets in each angle.

Rev. DNS: BRAGA () (annulet punctuation)

Rear part of leopard to left within inner circle.

Wt: 0.84g. Die axis: 190°.

On both sides of the coin it is just about possible to see that the piece originally extended beyond the apparent outer edge of the coin. At a couple of points the feet of letters are just visible and the cross also seems to continue beyond the present outer circle.

The piece is clearly from Bergerac, *dominus Bragairaci* in abbreviated form being the title used on this coinage. The obverse legend would be something like HEN/COM (or DUX)/LA/NCE, the extra I being a space-filler of a sort well-known in the Anglo-Gallic coinages (e.g. Elias 68a, 135, 136). As Elias noted, most of the Bergerac coins are imitations of coins of Aquitaine, and a look at the Gascon coinage gives the prototype for the new piece. The probable long cross and the distinctive form of the seated leopard, with its tail waving in the air, distinguish it from the gros au léopard passant (pl. 19, 4), known in both Aquitanian and Bergerac forms (Elias 59 and 132). The form of

the leopard resembles that used on the gros au léopard couchant (Elias 68a), but the obverse design is completely different (pl. 19, 3). There remains the gros au léopard à la croix longue (Elias 55), a rare piece even in its Aquitanian incarnation (pl. 19, 2). Elias's description of this coin is as follows.

Obv. /ED/REX/ANG/LIE/

/BND/ICT/V:SIT:N/OME:DNI/NRE:DEI/

Long cross dividing both legends, three pellets in each angle.

Rev. +DVX:ACITANIE (key between N and I)

Crowned leopard to left within inner circle.
Tressure of arches containing leaves.

(Elias notes that his reading for the beginning and end of the outer legend is conjectural.)²

The match between the two pieces is obvious: the same design, and with names and titles in the same places.

Slotting the piece into the Bergerac series in accordance with this match would place it among the issues with the title earl of Lancaster, before 1351. (The obverse legend thus probably read HEN/COM/LA/NCE.) Elias places the Aquitanian version as perhaps following the gros tournois à la couronne (issued from 1337 to 1341), as a counterpart to the French gros à la fleur de lis. He remarks of the Aquitanian coin: 'Curiously enough this coin was – as far as we know – not imitated in Bergerac, whereas the gros à la fleur de lis was.'³ It now appears that we do have a Bergerac equivalent of the gros au léopard à la croix longue, as well as of the French piece to which it may have been the counterpart. However, Elias remarks of the single known specimen of the latter that 'sincere doubts as to its authenticity may be raised'.⁴

In conclusion, the new piece adds a possible fifteenth type to the coinage of Bergerac, and a tenth to the period 1347–51, giving support to Elias' careful conjectures as to mint activity at Bergerac.

¹ For the coinage of Bergerac see E. R. Duncan Elias, 'The coinage of Bergerac 1347–1361', *BNJ* 49 (1979), 56–73, and *The Anglo-Gallic Coins* (London/Paris, 1984), pp. 151–61. The Elias numbers given in the text refer to the latter work.

² Elias, *The Anglo-Gallic Coins*, p. 91.

³ Elias, *The Anglo-Gallic Coins*, p. 92.

⁴ Elias, 'The coinage of Bergerac', p. 66.

THE COINAGE OF THE MARIANS IN EDINBURGH CASTLE IN 1572 – AN ADDENDUM

D. J. RAMPLING and J. E. L. MURRAY

THE purpose of this note is to record two further coins which may be subsumed as 'Marian' issues.¹ One, a forty-penny piece of 1572, can be attributed with some certainty to the Marians, as it appears to be from the same hand as the two half-merk pieces already ascribed to this coinage. The other, a ryal of Mary dated 1567, and bearing the revaluation countermark of 1578, is sufficiently unusual to distinguish it from the regular issue, while the workmanship suggests that the dies for this, too, were made by a hand well practised in engraving the Scottish symbols. Its attribution to the Marian coinage is thus provisional, but consistent with the documentary evidence indicating that thirty-shilling pieces were manufactured by Mary's adherents.^{2,3}

The distinguishing features of the forty-penny piece are the use of pellets to ornament the arms of the reverse cross, and the style of the crowns in the alternate angles of the cross. The first of these features is not restricted to the Marian coins: as explained in the original article, pellets on the cross-arms are also found on certain half-merks and forty-penny pieces which are undoubtedly products of the regular mint, because of using the same punches as the later issues with bars on these cross-arms. (A regular forty-penny piece with pellets is illustrated for comparison, being from the same reverse die as nos 6 and 7 of the original article.) The crowns in the angles of the reverse cross of the new forty-penny piece bear a clear resemblance to those of the Marian half-merk pieces in that the

arches are more peaked, and the base of the crown more open, than on the regular issue. The obverse die does not appear to be represented in photographs of published coins.⁴ The coin has a somewhat base appearance but its weight is correct at 50.0 gr.

The ryal is obviously struck, appears to be of good metal, and weighs 460.7 gr., an acceptably normal weight for condition. The countermark is punched in and is from a normal punch. The obverse and reverse dies are quite dissimilar to those exhibited by any coin known to us, including ryals in the collections of the British Museum, the Royal Museum of Scotland, the Hunterian Museum, and the Ashmolean Museum. Obvious distinguishing features of this coin are the large date letters, and the increased diameter of the circle of pellets enclosing the central design on both sides, but other differences are apparent in all design elements. This coin, if not Marian, is almost certainly a contemporary production, and quite unlike the cast forgeries of later manufacture.⁵

The only other unusual contemporary ryal recorded is the Lockett specimen with an obverse die having Henry's name preceding that of Mary.⁶ This coin has been regarded until now as a contemporary forgery, but in examining the complete photographs of Lockett's Scottish coins, Mrs Murray noted that the coin shares a reverse die with coins of the regular issue, and is, in consequence, probably genuine despite its low weight. It has none of the properties of the ryal now provisionally attributed to a Marian source.

KEY TO THE PLATE

PLATE 17

1. Marian half-merk, 1572, Mrs Murray's collection.
2. Marian forty-penny piece, 1572, Dr Rampling's collection.
3. Regular forty-penny piece with pellets, 1572, Dr Stewart's collection.
4. Marian thirty-shilling piece, '1567', Dr Rampling's collection.
5. Normal thirty-shilling piece, 1566, R. C. Lockett, part lot 914.
6. Henry and Mary thirty-shilling piece, 1566, R. C. Lockett, part lot 913.
(No. 1 is no. 2 of the original article, repeated for convenient comparison with the Marian forty-penny piece. Nos 5 and 6 are from the Lockett photographs.)

Acknowledgement. We are grateful to Dr Ian Stewart for his comment, in the light of which the second paragraph has been altered; and likewise for providing the coin illustrated as no. 3. He also has two non-Marian half-merks with pellets and the Marian half-merk from R. C. Lockett's collection.

¹ J. E. L. Murray, 'The coinage of the Marians in Edinburgh Castle in 1572', *BNJ* 57 (1987), 47–53.

² *A Diurnal of Remarkable Occurrents that have passed within the Country of Scotland*, edited by T. Thomson, Bannatyne Club (Edinburgh, 1833), and Maitland Club (Glasgow, 1833), pp. 261 and 297.

³ R. W. Cochran-Patrick, *Records of the Coinage of*

Scotland, (Edinburgh, 1876), I, 94–106.

⁴ The lion rampant is apparently facing the viewer, i.e. heraldically guardant, a feature for which we cannot suggest a precedent.

⁵ D. J. Rampling and N. G. Taverner, 'False Scottish Ryals', *NCirc* 87 (1979), 550.

⁶ R. C. Lockett Sale Catalogue, Part XI (1960), Lot 913 (part). Presumably this is the same specimen as that listed as Lot 263 in the R. W. Cochran-Patrick Sale Catalogue (1936), where its weight is given as 429 gr. The coin was exhibited at a meeting of the British Numismatic Society in 1948 by C. W. Peck. See *BNJ* 25 (1948), 355.



RAMPLING AND MURRAY: THE MARIANS IN EDINBURGH CASTLE

FURTHER NOTES ON THE TOWER SHILLINGS OF CHARLES I

MICHAEL SHARP

CONTINUED study of the series has revealed the following coins: D2/2 m.m. harp, E2/1 m.m. bell, F5/2 m.m. triangle (over anchor flukes to left *obv.*) and H2/1 m.m. sceptre. Two additions to Briot's series have also been revealed: a coin of the first milled issue m.m. B. with the reverse legend commencing at 12 o'clock and a coin of the hammered issue m.m. triangle. Two examples of the latter are known, one from the Thorpe Hall hoard (1939), which escaped my

earlier attentions, and another from the Ryhall hoard (1987). They are die duplicates and their reverses from the die used to strike the m.m. triangle (over anchor *obv.*) coin from the Messing hoard (1975).¹

Further comments on Briot's hammered issues, which students may find helpful, are that they differ from coins of the second milled issue in not having a lozenge stop behind the mark of value and the anchor mark has an unbroken ring.

¹ *BNJ* 50 (1980), 136.

A HOARD OF DEFACED FORGED HALFPENCE OF THE REIGN OF GEORGE III

MICHAEL RHODES

A HOARD of around 325 defaced, forged halfpence, of mostly eighteenth-century date, was found in the City of London in March 1981. It was discovered by John Schofield and Tim Williams of the Museum of London's Department of Urban Archaeology during the inspection of a building site which was being cleared by machine prior to an archaeological excavation. The site lay on the north side of Thames Street, between Bennet's Hill to the west, St Peter's Hill to the east, with Queen Victoria Street to the north (TQ 3202280904; Museum of London Site Code: PET 81). It is now occupied by part of the new City of London Boys' School.

The hoard was recovered from the infill of an early post-medieval cellar in the north-west corner of the site. There were no signs of a container, but the hoard had the appearance of an elongated greenish conglomeration, as if the coins had lain along the bottom of a bag or small sack. About thirty per cent of the coins were scattered nearby, suggesting that the hoard had been slightly disturbed by the machinery. A map of 1799 shows a number of small properties along the

east side of Bennet's Hill, and the cellar probably belonged to one of these, perhaps that of Number 10.¹ This part of the site lay outside the limits of the archaeological excavation, and there is no further information on the cellars, except that they were filled in before the construction of warehouses in the late nineteenth century. The Tithe Books of 1782–1824 suggest that the cellars belonged either to houses or warehouses; Number 10 was a warehouse which from 1820 incorporated a shop.²

Coin Details

When found, many of the coins were held together by corrosion products. After soaking in changes of alkaline glycerol for two weeks, the coins were prised apart and some received mechanical cleaning. They were buffered for two days in a pH 6 solution of di-sodium EDTA, and soaked first in deionized water and then in benzotriazole, a corrosion inhibitor.

The present condition of the coins varies considerably. The best show little evidence of having been

Acknowledgements. I would like to thank a number of colleagues in the Museum of London for assisting my research, namely: Tim Williams and John Schofield for providing details of the site and the circumstances of discovery, Suzanne Keene and the Archaeological Conservation Section for conserving the coins, Trevor Hurst for photography, and Tony Dyson for comment and advice. My thanks are due also to Barrie Cook of the British Museum and to Graham Dyer of the Royal Mint Museum for useful discussions.

The St Peter's Hill excavation was funded by the City of London Archaeological Trust.

¹ *Horwood's Plan of London, Westminster, Southwark, and Parts Adjoining* (London 1792–99).

² Guildhall Library, London, MS 880, Vols 1 and 2, and MS 880A.



RHODES: DEFACED FORGED HALFPENCE OF GEORGE III

buried, but most exhibit considerable corrosion damage and over one third of the dates are illegible.

All the coins had been cut into two pieces, sometimes more, by means of a powerful pair of shears. In a few instances, the cut was not completed. The coins were mostly cut to one side; presumably this was easier than cutting across the centre. An attempt by the writer to reunite the coin halves proved largely unsuccessful. Since the finders made every effort to collect all of the coins, it would appear that the hoard represents only a portion of what was once a much larger collection of defaced coins and blanks.

A summary of the hoard is provided below. The identifiable coins were quantified by counting the dates, or (where no date was visible) the part of a coin where the date would have been situated. Blanks and totally illegible coins were quantified by counting centre points.

Setting aside a few false Anglo-Irish halfpence of the reigns of George II and III, the coins fall into three main categories: blanks, slightly worn forged English halfpence of the first issue of George III (1770–75), and very worn English halfpence of William III, George I and George II. The third group are classed as forgeries on the basis of the few examples which are sufficiently clear to reveal details of the dies. There would, in any case, have been no reason for defacing the coins if they were genuine. The George III halfpence are palpable forgeries, and come from a wide variety of dies. They are 26–29 mm in diameter. The seven complete coins weigh between 5.42 and 8.24 g (84.7–128.8 gr.), average 7.21 g (112.6 gr.), whereas the official issues weighed from 140.9 to 167.9 gr.; average, 153.4 gr. All the coins seem to have been removed from circulation. The blanks are 26–28 mm in diameter, and seem to have been cut from rolled sheet metal; some have file marks around the edge. The seven complete examples weigh between 5.74 and 7.42 g (89.7–115.9 gr.), average 6.30 (98.4 gr.).

(Pl. 18 shows a selection of the defaced forged halfpence, dated 1775, with one of the defaced blanks.)

Date and circumstance of hoard

The hoard belongs to a small group of hoards, deposited in England between 1672 and c.1825, which comprise coins of low denomination, often entirely of copper.³ The present hoard is the second largest of its group and the only one which comprises defaced

forgeries.⁴ Although hoards of this group are particularly associated with small tradesmen, the defacement of these coins is probably the work of an official of some kind (see below). Presumably they were hoarded because of their value as scrap metal.

The latest coins in this hoard may probably be dated to between 1775 and 1787, when the shortage of small change gave rise to the production of unofficial coinage. Thereafter, counterfeiters realised that the risks incurred in forging regal copper could be avoided by forging the token coinage, for which there was no penalty.⁵ The relatively large number of halfpence dated 1775 suggests that the hoard was deposited at least several years later. The number of 1775 fakes in circulation would have continued to rise after this date because subsequent forgeries would presumably have been dated 1775 – the last year of the official issue.

The forging of copper coins was increasingly recognised as a problem from the middle of the eighteenth century.⁶ A statute of George III attempted to improve the previous ineffectual legislation, ruling that:

‘If any person after the 24th of June 1771, shall buy, sell, take, receive, pay, or put off any counterfeit copper coin, not melted down or cut in pieces, at or for a lower rate or value than the same by its denomination imports, or was counterfeited for, he shall be adjudged guilty of felony.’⁷

The measure seems, however, to have been effective only with regard to the arrest of coiners and dealers in newly forged coin.⁸ It cannot therefore satisfactorily explain why these circulated coins were defaced, particularly since the adulteration of the copper coinage with forgeries seems to have been tolerated as a necessary evil. In 1787, on examining samples of the copper coin in circulation, the Mint found that forgeries greatly outnumbered genuine coins. Only 8 per cent of copper coins closely resembled the king’s coin, and 12 per cent were blanks.⁹ The proportion of blanks in the present hoard is 16 per cent, but a slightly higher figure is only to be expected of a hoard which contains no genuine coins.

The defacement of the coins is more easily explained if the hoard is placed in the period 1797 to c.1820. Following the introduction of the Soho coinage in 1797, the public began to refuse old halfpence, which began to accumulate in the coffers of tradesmen. From 1814, however, the Mint agreed to accept the face value of the 1719–1775 issues, including such

³ This class of hoards is described and discussed by P. H. Robinson in ‘The Dunchurch and Stafford finds of Eighteenth-Century Halfpence and Counterfeits’, *BNJ* 41 (1972), 147–58.

⁴ The larger hoard comes from Uckfield, Sussex; see I. D. Brown and M. Dolley *A Bibliography of Coin Hoards of Great Britain and Ireland 1500–1967* (London 1971), 38, No. GD3.

⁵ R. C. Bell *Commercial Coins 1787–1804* (Newcastle-

upon-Tyne, 1963), p. 10.

⁶ F. P. Barnard ‘Forgery of English Copper Money in the 18th Century’ *NC* 5th Ser. 6 (1926), 341–60, esp. 341–2.

⁷ Statute II George III, *cap.* 40, §2.

⁸ P. Colquhoun *A Treatise on the Police of London* (Philadelphia, 1798), p. 5; E. Hyde East, *A Treatise of the Pleas of the Crown* (London, 1803), p. 182.

⁹ Sir J. Craig *The Mint* (Cambridge, 1953), p. 253.

counterfeits as could not be excluded without skilled scrutiny.¹⁰ The Mint records do not show what was done with the fakes which they rejected, which leaves open the possibility that they may have been defaced, then returned. Nevertheless, in view of the authoritarian attitudes of the times, it seems rather unlikely that an official body would do other than to seize false coin without recompense.

Another explanation is suggested by a statute of 1798, which ruled that no false coin, including copper, could be exported or put on board any ship, the penalty being forfeiture and a heavy fine.¹¹ In view of the proximity of this discovery to the London waterfront, one wonders if the hoard might be derived from official seizures by the customs. The enthusiasm of the customs for confiscating false copper coins during the mid-eighteenth century, when they were officially tolerated by the Mint, has been noted by Craig.¹² Whatever the case, it seems improbable that a shopkeeper or private individual would have had cause to undertake the laborious task of spoiling these coins. The efficient and uniform manner in which they have been cut is likewise suggestive of an official act.

The coins are now in the Museum of London.

Catalogue

False English halfpence

William III Type 1 or 2 (1695–99) dates unclear, 2.

¹⁰ Craig, pp. 266–7.

¹¹ Statute 38 George III, chap. 67, § 1.

George I 1724, 2 (one cast); 2nd issue (1719–24) date unclear, 5.
George II 1730, 3 (one weakly struck); 1733, 1; 1734, 1; 1735, 1; YH (1729–39) date unclear, 5; 1743, 2 (one double struck on O.); 1744, 1; 1745, 3; 1746, 1; 1751, 2; 1752, 2; 1753, 7; 1754, 3; OH (1740–54) date illegible, 28; YH or OH otherwise illegible, 15.
George III 1770, 3; 1771, 3; 1772, 4; 1773, 21 (one countermarked with an R with serifs); 1774, 19; 1775, 79; date unclear, 32.
George I, George II, and/or George III otherwise illegible, c.25.

False Anglo-Irish halfpence

George II 1760, 1
George III O. Type 1 (1766 or 1769) date clipped off, 1; O. Type 3 (1774–83), 1

Others

Blanks 51

¹² Craig, p. 252.

THE REATTRIBUTION OF A SCOTTISH TRADESMAN'S COUNTERMARK

HARRINGTON E. MANVILLE

A SCOTTISH tradesman's countermark, stamped on both sides of an eight-reales coin minted at Potosi, Bolivia in 1797, with assayers' marks P.P.¹ and the additional Portuguese countermark of a crowned G.P., has a heavy grid cancellation nearly obliterating the issuer's name and the denomination. Previous attempts to decipher what lies under the cancellation have met with indifferent success but enough progress now has been made that the issuer and denomination may be given with confidence.

Previous History

The first traced reference to this so-far unique type in the tradesmen's countermark series is in the sale of the collection of Judice dos Santos in 1906,² where it was described:

'1797. Peso de Charles III fr. à Potosi, contre-maqué de FLOURISH LEEDS entourant les armoiries. Rev. JOHN. SPATT et le poinçon des Açores.' It was not illustrated and sold for 35 Dutch florins.

¹ The assayers at the Potosi mint between 1795 and 1802 were Pedro N. Mazondo, Pedro Prudencio de Esquerreneia, and Pedro M. Albizú. The initials of two of their Christian

names are shown on this coin.

² J. Schulman, Amsterdam, 26 March 1906 'et jours suivants', part I, p. 107, lot 2115.

This description was copied in 1914 by Adolfo Herrera in *El Duro*,³ and in 1958 by Humberto F. Burzio in *Diccionario de la Moneda Hispanoamericana*.⁴

By 1960, it was realized that the Leeds attribution was incorrect because the tree in the centre of the countermark on the obverse of the coin is part of the arms of the City of Glasgow,⁵ whose motto is 'Let Glasgow Flourish'. In the sale of a portion of the Howard D. Gibbs collection,⁶ the description of the same countermarked coin (reverse of coin illustrated) took one step forward and one back in deciphering the inscription. The reverse legend (on the coin obverse) was given as 'LET GLASGOW FLOURISH around shield of City Arms', but the obverse legend was rendered as 'SCH SATT'. This correctly places the issuer to Glasgow rather than Leeds but moved farther away from the issuer's name and, for want of further examination and interpretation, the latter reading has persisted for the past thirty years.⁷

The issuer's name has now been read as JOHN SLATER with a central denomination of 5 (shillings). Although the lower portion of the countermark on the reverse of the coin is heavily cancelled, the first two letters apparently are G and I, and the remnants of the other letters could fit the word GLASGOW. The additional unrelated countermark of Crowned G.P. shows that the coin was verified for circulation in the Azores in 1887 and demonstrates the long circulating life of the original Spanish-American dollars.

Who was John Slater and when could he have issued his countermarked token?

The Date of Issue

The coin is dated 1797 and since few, if any, Scottish countermarked dollars were issued prior to the early nineteenth century, a post-1800 punching is virtually dictated. Merchants would not have given their tokens a lower denomination than the market rate because not only would they have suffered a loss over cost but in a rising bullion market under-valued tokens would not circulate. Either they would go into the melting pot or perhaps they might be given an improvised cancellation by a holder not wishing to argue over the value of a piece plainly stamped with a denomination that was under the then-current bullion value.⁸

³ *Real Academia de la Historia* (Madrid, 1914), 2 vols., vol. I, pp. 126, 262, no. 1075.

⁴ *Fondo Histórico y Bibliográfico* (Santiago de Chile, 1 vol., plates 1956, 2 vols., text 1958), vol. I, p. 92, no. 28.

⁵ A tree supporting a bell, bird, and salmon.

⁶ Hans M. F. Schulman, New York, 19 November 1960, lot 372.

⁷ See for example, Brunk, Gregory G., *Merchant Countermarks on World Coins*, (Rockford, Illinois, 1989), p. 121, no. 53970.

⁸ Rising bullion values may be the source of some of the crude hammered or tooled cancellations which stand in marked contrast to the heavy grille obliterating marks that indicate the disinclination of the issuer to redeem the coin at a premium for a second time in a falling bullion market.

In that era, the price of silver fluctuated considerably in Great Britain, especially during the period of the wars with Napoleonic France. During the first quarter of the century Spanish dollars fetched above five shillings per coin throughout 1811–1813 and for much of 1814 and 1815 and a token would not have been marked with that valuation during those periods.⁹

It should be safe, therefore, to limit John Slater's issue either to pre-1811 or between 1816 and about 1825 when the countermarking of dollars finally ceased. The possible time-frame may be further narrowed to those periods when the price of a dollar was not too far below the marked valuation. If dollars could be obtained at, for example, 4s. 1d., it would encourage the use of a counterfeit 5s. punch to gain a quick profit of more than twenty per cent. Counterfeit marks of other issues, several probably contemporary, tend to confirm this. From 1820, the bullion price of dollars remained below 4s. 3d. and some countermarks valued at 4s. 6d. or 4s. 9d. may have been issued then. A post-1820 issue date is not ruled out, but a slightly earlier period is more probable. With the advent of the new silver coinage in 1816, the circulation of tokens was supposed to cease in Great Britain, although the practice lingered on for a few more years in Scotland – tapering off as adequate supplies of the new coins arrived – and ended entirely by about 1825.¹⁰

The Issuer

In the first quarter of the nineteenth century, there are records of two John Slaters in Glasgow. One was a hammerman (i.e. a smith or metal-worker) who became a burgess and shield-brother by purchase in 1808, that is, he was accepted into the guild.¹¹ He is not listed in the Glasgow city directories of merchants, manufacturers, traders, etc. at any time in the first quarter of the century and it seems safe to dismiss him as a possible issuer of the countermarked dollar token. The second John Slater, almost certainly the issuer, is first noted as having a stoneware and china shop in Candleriggs Street and he continued as a merchant, sometimes with a partner, for the twenty years from 1808 until 1828. No other John Slaters are recorded as

⁹ Figures on bullion prices between the years 1790 and 1827 have been extracted from Sessional and Miscellaneous Papers although the prices given in those sources are for dollars as bullion. From an unpublished study, conversions made to obtain the value per coin throughout the period are used here.

¹⁰ The latest existing date of a countermarked undercoin is 1823. A Scottish countermark on a type of Spanish-American coin not struck until 1824 appeared in a sale early in this century but the date was not given in the catalogue. The coin itself has disappeared since the sale and very well may have been stolen and subsequently melted.

¹¹ *The Burgesses & Shield Brethren of Glasgow 1751–1846*, Scottish Record Society (Edinburgh, 1935), p. 252.

tradesmen and no other relevant Slaters have been noted before 1826.¹²

John Slater the merchant had premises at 83 Candleriggs in 1808 and in the following year expanded his address to include the number next door. The sole address of 83–84 Candleriggs continued until 1817 when a residence at 9 Bath Street also was given. In 1818, John Slater added tea to his china and stoneware and in the following year he either reduced his shop premises or simplified the listing to 84 Candleriggs only.

In 1820, Slater took a partner and apparently dropped or restricted the pottery portion of the business, the listing now reading 'Slater & Geddes, tea dealers and general grocers', at the same business and residential addresses. This association lasted for three years. In 1823, John Slater is listed as a tea dealer and grocer at 84 Candleriggs; Archibald Geddes had a stoneware works in Finnieston.

By 1825, John Slater slightly changed the emphasis of his business to 'tea dealer (wholesale and retail)', still at 84 Candleriggs, and further changes were in his immediate future. The 1826 directory omits John Slater but lists a Thomas H. Slater for the first time, with a tea warehouse at 76 [*recte* 56] Candleriggs; while Archibald Geddes continued his pottery works, now in Lancefield. It is unclear if T. H. Slater was John's son or nephew whom he had been helping to set up in business, but in 1827 John again was listed as a tea merchant, now at 12 Wilson Street, still with the previous house address, and Thomas had a tea warehouse at 56 Candleriggs.

In 1828, John again listed groceries with his tea business and Thomas gave his residential address as Wilson Street – without a house number. This is the last reference to John Slater seen in the directories. In the same year, his erstwhile partner, Archibald Geddes continued his pottery works at 1 Gillespie Street, Lancefield, and had a warehouse at 36 Buchanan Street, Glasgow.

Conclusions

Although conclusions drawn from a single specimen of any coin or token must be regarded with some caution, it may be safely deduced that the issuer of this countermarked token, a John Slater of Glasgow, conducted a business that required silver coins for paying workers and/or in making change for payments in gold coin or large-denomination banknotes. The original Bolivian coin weighs 412.0 grains against an authorized issue weight of c.416 grains and has a

specific gravity of approximately 10.3, showing a silver fineness of about .880. Spanish-American coins of this period generally show a fineness between .800 and .900 and the original coin may be accepted as genuine. That the countermark is a genuine merchant's mark is virtually proved by the heavy grid cancellation which would have been applied to prevent it from being presented for payment a second time at the stamped valuation of five shillings.

While the period of issue could have been between 1808 and 1810 when Slater first opened a pottery shop, during the few months in 1814 or 1815 when the price of a Spanish dollar briefly fell below five shillings, or after 1823 (during 1820–1823 surely it would have read Slater & Geddes), it is much more likely to have been between 1816 and 1819 – a period when the price fluctuated between 4s. 2d. and 4s. 9d. After 1819 the price remained so low that it would have strongly invited counterfeiting. That this specimen is the only known survivor and that it is cancelled perhaps suggests a short-lived issue between late 1817 and early 1819, before the dollar price fell permanently by about 5d.

To strengthen the attribution to the merchant John Slater, it would have been preferable if he could be shown to have had an interest in a pottery manufactory, as his former partner did in the mid-1820s, thus indicating a definite need for silver to pay stoneware workers. More likely this is just an example of a merchant in one of the trades – e.g. flesher (butcher), spirit dealer, haberdasher/silk mercer, grocer – as well as friendly societies, cotton works, collieries, banks, and manufacturers of various types of goods, who found it useful to provide silver tokens of a fixed value to facilitate trade, to pay employees, and at the same time advertise their business.

Unless another specimen showing differences in the legend or other evidence is discovered, the countermark may be recorded as:

Glasgow, Lanarkshire

Obv. JOHN SLATER (stoneware, china, and tea merchant at 83–84 Candleriggs Street) [*? GLASGOW*] around 5. *Rev.* LET GLASGOW FLOURISH around the arms of Glasgow. Countermarked on both sides of a Latin-American 8 reales and probably issued c.1817–1819. The only recorded specimen has the obverse mark cancelled, with resulting partial flattening of the reverse mark, and an additional countermark of Crowned G.P. for the Azores in 1887.

(Pl. 19, 5)

¹² Glasgow Directories consulted for information on Slater's business and addresses for the years 1800–1801, 1803–1804, 1808, 1810–1811, 1815, 1817, 1825 were examined at the Special Collections Library of the University of

Glasgow; for 1818–1824, and 1826–1828 at the Scottish National Library, Edinburgh; also Pigot & Company's Directory for 1825–26 and the Glasgow Post-Office Directory for 1828–29 at the S.N.L.

A NOTE ON THE MEDALLIST D. G. BERRI

R. H. THOMPSON

D. G. BERRI was designated by Forrer in 1904 a contemporary French sculptor and medallist.¹ Understandably therefore a massive biographical work, drawing on Forrer, describes 'berri, d.g.' (in its ubiquitous lower-case letters) as having flourished in Paris in 1900.² Furthermore, Laurence Brown includes one medal by D. G. Berri with the apologetic note 'This medal by a foreign artist is included for the sake of completeness'.³

Consequently an unpublished piece which showed Berri working in London seemed at short notice worth reporting to the *Journées Numismatiques* held in Poitiers.⁴ The present note goes on from there to establish that this supposedly foreign artist was not French but English, and worked not in Paris but in London. Moreover, he was identical with the subject of the I. B. N.'s following entry for 'berri, david gardea, writer on art'.

The medals attributed to Berri by Forrer and Brown, also by Grant,⁵ commemorate Handel, Scott and Shakespeare, which already provided a suspiciously British context, Handel of course qualifying by long residence. The French evidence for medals by Berri one can say, without saddling Mme Sylvie de Turckheim-Pey with undue responsibility for a brief investigation at the Bibliothèque Nationale, is negative. Forrer offers nothing in support, and it is to be feared that he described Berri as French solely from his non-English form of name.

The piece which occasioned the initial report is a sixpence check of the Southampton Hotel, signed D. G. BERRI LONDON, and attributable like similar checks by W. J. Taylor to the Southampton Hotel situated at 21 Southampton Buildings, London W.C., from at least 1853 to 1870.⁶ This was at the corner of Chancery Lane; and inspection of *The Art of Printing* by a certain D. G. Berri, 1st edition 1864 to 3rd edition 1871, reveals that it was published by the author at 36 High Holborn, opposite Chancery Lane, and so just across the road from the Southampton Hotel.

This is almost coincidence enough, yet there is more. The book ends with advertisements by the author, and one of these reads as follows (2nd edition, 1865, p. 63, but effectively the same in all three editions):

MEDALS FOR PRIZES. | SUITABLE FOR COLLEGES, SOCIETIES. *Literary & Scientific Institutions*, | RIFLE CORPS. &c. &c. | [rule] | A GREAT VARIETY OF | MEDALS ALREADY PUBLISHED | IN GOLD, SILVER, BRONZE & WHITE METAL. | [rule] | BEAUTIFULLY EXECUTED PORTRAITS OF SHAKESPEARE, MILTON, SCOTT, HANDEL, JAMES WATT, &c. &c. | [rule] | THE WISE AND THE FOOLISH VIRGINS. | [rule] | THE LONDON SCOTTISH RIFLE CORPS MEDAL, ETC. | [double rule] | D. G. BERRI. | *Medallist, &c.*, | 36, HIGH HOLBORN, LONDON, W.C.

Medals of Shakespeare, Scott and Handel have already been attributed to Berri, so the identity of this London author and medallist with the 'French . . . sculptor and medallist' is confirmed.

Who, then, was D. G. Berri? He is given the forenames David Garden by the British Library Catalogue, and by the London directories 1870-1901 ('Gardner' 1856-61, but this is demonstrably incorrect). Garden was misprinted 'Gardea' by Allibone, whence the I. B. N.'s form of name.⁷ A business bore D. G. Berri's name as follows, the years being the titular dates of the directories:

1856-1861 96 Great Russell Street, Bloomsbury, W.C.

(at this address in 1852 was John Sylvester, civil engineer)

1862-1863 36 High Holborn, W.C. and 96 Great Russell Street

1867-1894 36 High Holborn, W.C.

1895-1901 11 Brownlow Street, Holborn, W.C.

His fullest trade description was 'die sinker, medallist, seal engraver & patentee of the post office hinge stamp, sole maker of the people's printing press'.

The People's Printing Press was probably a copy of

¹ L. Forrer, *Biographical dictionary of medallists*, ... vol. I, revised [edn.] (London, 1904), p. 176.

² I. B. N.: *Index bio-bibliographicus notorum hominum*, edidit Jean-Pierre Lobies, ... Pars C: *Corpus alphabeticum*, I. *Sectio generalis*, Vol. 17, ... (Osnabrück, 1980), p. 6759.

³ L. Brown, *A catalogue of British historical medals, 1837-1901* (London, 1987), p. 254, no. 2803.

⁴ R. H. Thompson, 'Deux (?) tokens anglais, oeuvres de graveurs français', *Bulletin de la Société Française de Numismatique*, 45 (1990), 863-5. The other medallist discussed, Brasseux, is credited by Forrer (vii, 115) with a medal of 'Louis Napoleon Bonaparte, President of the French Republic, 1851-1852'; but he, though absolute ruler 1851-2, was President from 1848, to which year the undated

medal may as well be attributed, as it is in J. P. Collignon, *Médailles politiques et satiriques*, ... 1848-1852 ([Charleville-Mézières], 1984), série parisienne de 1848, no. 941; so that there are no grounds for supposing any work was signed BRASSET X after the death of Brasseux *ainé* in 1850.

⁵ M. H. Grant, 'British medals since 1760', *BNJ* 22 (1934-7), 269-93; 23 (1938-41), 119-52, 321-62, 449-80 (at p. 151, s.a. 1860, and p. 323, s.a. 1864).

⁶ R. N. P. Hawkins, *A dictionary of makers of British metallic tickets, checks, medals, tallics and counters, 1788-1910*, edited by Edward Baldwin (London, 1989), p. 741. Berri was not included by Mr Hawkins.

⁷ S. A. Allibone, *A critical dictionary of English literature*, Supplement, I (Philadelphia, 1892), 138.

the American Army field press. It consisted of a flat bed to which a platen was hinged, and when turned down the whole was moved by a gear wheel under a fixed cylinder of which the pressure could be adjusted by screws. Berri claimed that his press had been used by the British Navy.⁸ It was chiefly in connection with the press that Berri undertook *The Art of Printing*, which was 'not meant to instruct practical printers, but to popularize the art and to enable any one who will follow a few simple explanations to become his own printer'; or her, to judge from the frontispiece included from 1865, of a lady in voluminous skirts operating Berri's new patent press.

He described it as 'a small, cheap printing press, useful for a great many persons who wish to print their own compositions, and for those who live at a distance from practical printers, and also for those pioneers of civilization who daily leave our shores to establish a home midst the pathless forests and the rolling prairies, and to perpetuate our industry with our language on the continents of Asia and Africa, and the distant islands of Polynesia . . .'. Whatever the origin of his surname, Berri's native language apparently was English.

He also published *The Art of Lithography* (1864, 1872), and in 1869 *Monograms, historical and practical*, which includes masons' marks and merchants' marks, and contains on its twenty plates a number of examples taken from coins. In one of his advertisements in *The Art of Printing* Berri offered seal engraving for arms, crests, monograms etc., note paper, cards, stencil plates, and stamps; he seems to have been a sort of heraldic stationer. For these purposes he called his business at 36 High Holborn the British, or even (in 1864) the British and Foreign Heraldic Office.

As its inventor Berri advertised the patent hinge stamp used in Her Majesty's Post Office, Stationery Office etc., and 'adopted by several of the continental governments'. The patent was no. 1020 of 1860 (24 April), issued to David Garden Berri of Bloomsbury for the invention of an improved date stamp, whereby any alteration, by means of moveable type, might be made with greater facility than hitherto.

In the first edition of *The Art of Printing* Berri advertised *New Ballads*, with words by D. G. Berri and music by E. Southwell, printed and published by D. G. Berri; and, also published by himself, *Morna, a legend in verse* by Charles Ross. In the second edition he included some printed music.

Amidst these heterogeneous activities medals also were produced. In *The Art of Printing*, 1st edition, page [41], Berri advertised the following:

Photography was widely used by 1864 for *cartes de visite*, but it is interesting to find it employed thus for publicity, and to find it applied to medals so early.

Specimens of most of Berri's medals have still to be located (the British Museum has none), and there may be more to be identified. Meanwhile the known work of the English medallist DAVID GARDEN BERRI (fl. 1856–1900) may be brought together.

Handel, George Frederick (1685–1759)

Obv: portrait

Rev: figure of Memory seated

Lit: Berri, 1864, p. [40]; Forrer, 1904, i. 176.

London Scottish Rifle Corps

Lit: Berri, 1864, p. [40]

Milton, John (1608–1674)

Obv: portrait

Lit: Berri, 1864, p. [40]

Scott, Sir Walter (1771–1832)

Obv: SCOTT-NATUS 1771 ·· OBIT 1832 | head right, signed on the truncation

Rev: Scott monument, view of Edinburgh in the background

Copper, 44mm

Lit: Berri, 1864, p. [40]; Grant, 1938/9, p. 151, s.a. 1860

Pl. 19, 6 (Ashmolean Museum)

Shakespeare, William (1564–1616)

Obv: SHAKESPEARE | bust left, signed on the truncation D. G. BERRI F. | NATUS 1564 OBIT 1616

Rev: View of a church amongst trees, viz. Stratford on Avon

Bronze or white metal, 44 mm.

Lit: Berri, 1864, p. [40]; Grant, 1939/40, p. 323, s.a. 1864; Brown, 1987, p. 254, BHM 2803.

Pl. 19, 7 (Ashmolean Museum)

Southampton Hotel, 21 Southampton Buildings, London W.C. (. . . 1853–70 . . .)

Obv: THE | [ornament] | SOUTHAMPTON | [ornament] | HOTEL | border of pellets

Rev: SIX PENCE | 6 | [signed] D. G. BERRI | LONDON | border of pellets

Brass, 28 mm, 0°.

Pl. 19, 8 (R. H. Thompson)

Watt, James (1736–1819)

Obv: portrait

Lit: Berri, 1864, p. [40]

Wise and Foolish Virgins (Matthew 25. 1–13)

Lit: Berri, 1864, p. [40].

⁸The numismatic biographical collection of eminent men of all ages. Photographs of obverse and reverse forwarded for 7 postage stamps. A copy in white metal 1 shilling, or 14 postage stamps.

^{*}James Moran, *Printing presses* (London, 1973), p. 240.



1



2



3



4



5



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7



8



COOK: BERGERAC

MANVILLE: SCOTTISH COUNTERMARK

THOMPSON: D.G. BERRI

COIN REGISTER 1989

IN recent times we have all been made increasingly aware of the significance of single coin finds, partly because such finds are relevant to the solution of important historical questions such as the regional pattern of coin circulation, and partly because so many new friends have, in practice, turned out to be either examples of very rare issues or completely new varieties. It is obviously desirable that single finds should be recorded promptly, accurately and in an organised manner, especially at a time when the use of metal detectors has radically increased the quantity of material coming to light, and in the past *BNJ* has carried contributions relating specifically to the Anglo-Saxon and Norman periods. These articles have rightly aroused great interest and have stimulated other authors to come forward with additional material not only in the Anglo-Saxon and Norman series but in earlier and later periods also.

In order to deal with this larger body of information in as coherent a way as possible it has been decided that *BNJ* will carry a single listing, or Coin Register, to which anyone having single finds to report from Britain or Ireland may contribute. Any Celtic, Anglo-Saxon, Norman or Plantagenet coin will be eligible down to and including the Tealby type of Henry II, but entries for Roman coins and for later medieval and modern coins will be restricted to those coins which are of particular numismatic merit. The essential criterion for inclusion will be that the coin is new, by virtue of either being newly found or (if previously discovered) being hitherto unpublished. Single finds from excavation sites may be included, if it seems likely that there would otherwise be considerable delay in publication.

It is intended that the listing of Celtic coins in the Coin Register shall be done in association with the Celtic Coin Index at the Institute of Archaeology, Oxford. Celtic material should therefore be channelled in the first instance to Derek Harrison at the Institute of Archaeology, 36 Beaumont Street, Oxford OX1 2PG. Other material should be sent to: E.M. Besly, National Museum of Wales, Cathays Park, Cardiff CF1 3NP. Potential contributors should contact either of the editors of *BNJ* with any queries about how to submit and set out material.

B.J.C. and E.M.B.

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Celtic Coins

1. Gallo-Belgic, stater, class E, Mack 27a, VA 50–1 (CCI 89/1).
Obv. blank.
Rev. horse r.; above, 'wishbone', oval and pellets; below, pellet.
 Weight: 6.22g.
 Woods End settlement, near Aldbourne, Wilts. Metal detector find.

C.E.K./D.J.H.

2. Gallo-Belgic, stater, class E. Mack 27A.

Obv. plain.

Rev. devolved horse r., pellets, curve and 'wish-bone' above, 'eye' ornament behind, pellet below.

Weight: 6.27g. Specific gravity: 13.99 (equivalent to 54% Au assuming Au/Ag binary alloy, but likely to be tertiary alloy with copper and more gold).

Near Orwell, Cambs. (site recorded on the county Sites and Monuments Register), spring 1990. Found by metal detector on a ploughed field, a few inches from a Series B 'sceat' (no. 62 below) and some 200 yards from another Class E stater (no. 3 below). *Prima facie* the two staters should be regarded as single finds rather than associated losses, since hoards dispersed by ploughing rarely travel more than 20 or 30 yards in the soil.

M.A.S.B. and M.J.B.

3. Gallo-Belgic, stater, class E. Mack 27A.

Obv. plain.

Rev. devolved horse r., pellets and curve above, 'eye' ornament behind, pellet below; in exergue pellets and curves.

Weight: 6.15g. Specific gravity: 13.93 (equivalent to 53% Au assuming Au/Ag binary alloy, but likely to be tertiary alloy with copper and more gold).

Near Orwell, Cambs. (site recorded on the county Sites and Monuments Register), spring 1990. See no. 2 above.

M.A.S.B. and M.J.B.

4. Early potin (CCI 89/9).

Obv. head l.

Rev. bull r.

Weight: 3.51g.

Wharf Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

5. Early potin (CCI 89/10).

Obv. head l.

Rev. bull r.

Weight: 3.96g.

Wharf Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

6. British, quarter-stater, similar to class PA, Mack 38, VA 147-1 (CCI 89/220).

Obv. blank.

Rev. stylised trophy: rectangular tablets with pellets to r. and l.; above, small annulet; below, pellet in ring and other ring ornaments.

Weight: 1.34g.

'Whitstable, Kent'.

C.E.K./D.J.H.

7. British, silver unit (CCI 89/233).

Obv. head l.; eye formed by pellet in oval; face framed by three large crescents; corded hair.

Rev. Celticised horse l. with mane and triple tail; above, pellet; below, feather or leaf(?). cf. Mack 441, VA 1555-1.

Weight: 1.06g.

Amersham, Bucks. Metal detector find.

C.E.K./D.J.H.

8. 'Atrebat', silver unit of Epatiecus, Mack 263, VA 580-1 (CCI 89/58).

Obv. EPAT. Romanised bust r.

Rev. eagle facing, head l. and wings spread, holding serpent in claws.

Weight: 1.29g.

Aldworth, Berks., 1989.

C.E.K./D.J.H.

9. 'Atrebat', silver unit of Caratacus, Mack 265, VA 593-1 (CCI 89/15).

Obv. CARA. Romanised bust r.

Rev. eagle facing, head l. and wings spread, holding serpent in claws.

Weight: 1.23g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

10. Uncertain, bronze unit, cf. Mack 171, VA 1750-1 (CCI 89/4).

Obv. head r.

Rev. horseman r., arm raised behind.

Weight: 1.46g.

Wharf Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

11. 'Catuvellauni', bronze unit of Tasciovanus, Mack 172, VA 1808-1 (CCI 89/232).

Obv. VERLAMIO between points of ornament formed of two interlacing squares.

Rev. bull l.

Weight: 1.93g.

'Bicester, near Oxon.' Metal detector find.

C.E.K./D.J.H.

12. 'Catuvellauni', silver unit of Tasciovanus, cf. similar gold quarter stater, Mack 185, VA 1786-1 (CCI 89/16).

Obv. TASCI on tablet across wreath.

Rev. horse (Pegasus?) springing l.

Weight: 1.24g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

13. 'Catuvellauni', bronze of Tasciovanus, Mack 168.

Obv. bearded head right.

Rev. VII[R], horse left, pelletted annulet and trefoil above.

Weight: not recorded.

Near Barrington, Cambs. (site recorded on county Sites and Monuments Register), 1987/88. From same field as nos 14 and 15 below.

M.A.S.B. and M.J.B.

14. 'Catuvellauni', bronze of Tasciovanus, Mack 179.

Obv. cruciform ornament.

Rev. boar right.

Weight: not recorded.

Near Barrington, Cambs., 1987/88. From same field as no. 13 above.

M.A.S.B. and M.J.B.

15. 'Catuvellauni', bronze of Tasciovanus, Mack 190.

Obv. head right, with long beard.

Rev. V[R?], horseman right.

Weight: not recorded.

Near Barrington, Cambs. (site recorded on county Sites and Monuments Register), 1987/88. From same field as no. 13 above.

M.A.S.B. and M.J.B.

16. 'Catuvellauni', bronze unit of Tasciovanus, cf. Mack 189, VA 1890-1 (CCI 89/236).

Obv. RVII above lion r. within double circle.

Rev. eagle with spread wings.

Weight: 1.69g.

Brackley area, Northants. Metal detector find.

C.E.K./D.J.H.

17. 'Catuvellauni', bronze core of plated stater of Cunobeline, cf. Mack 211, or VA 1931-9 (CCI 89/217).

Obv. traces of CA MV divided by corn ear.

Rev. CVN[O?] below horse prancing r.; above, star and branch.

Weight: 4.21g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

18. 'Catuvellauni', bronze unit of Cunobeline, Mack 221, VA 1971-1 (CCI 89/218).

Obv. CVNOBELINI in two compartments of tablet.

Rev. seated Victory l.

Weight: 2.67g.

Brackley, Northants. Metal detector find.

C.E.K./D.J.H.

19. 'Catuvellauni', silver unit of Cunobeline, Mack 237, VA 2057-1 (CCI 89/11).

Obv. CVNO. Winged bust r.

Rev. TASCIO. Winged sphinx l.

Weight: 1.17g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

20. 'Catuvellauni', silver unit of Cunobeline, cf. Mack 238, VA 2059-1 (CCI 89/12).

Obv. [TASCI]IOVANI. Romanised bust r.

Rev. CVNOBE[LI]. Seated figure r., playing lyre.

Weight: 1.28g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

21. 'Catuvellauni', silver unit of Cunobeline, Mack 238, VA 2059-1 (CCI 89/219).

Obv. TASCI[IOVAN]. Romanised bust r.

Rev. [CVNOBELINI]. Seated figure r.

Weight: 1.30g.

Brackley, Northants. Metal detector find.

C.E.K./D.J.H.

22. 'Catuvellauni', silver unit of Cunobeline (CCI 89/17).

Obv. CVNO. Beardless Romanised head r.

Rev. TAS. Victory with outstretched arm, walking r.

Weight: 1.24g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

23. 'Catuvellauni', silver unit of Cunobeline (CCI 89/96, also 90/852).

Obv. (?)serpent(s) coiled within border of inter-twined lines, cf. Mack 214, VA 1947-1.

Rev. CVN below Pegasus springing l.

Weight: 1.05g.

Haverhill, near, Suffolk. Metal detector find.

M.J.C.

24. 'Catuvellauni', bronze unit of Cunobeline, Mack 242, VA 2089-1 (CCI 89/235).

Obv. CVNOBELINI. Laureate head l.

Rev. traces of TASCIOVANI E. Centaur r., blowing horn.

Weight: 2.43g.

Brackley area, Northants. Metal detector find.

C.E.K./D.J.H.

25. 'Catuvellauni', bronze unit of Cunobeline, Mack 243, VA 2901-1 (CCI 89/13).

Obv. head r., inscription almost effaced.

Rev. sow r., traces of inscription above.

Weight: 1.39g.

West Wycombe, Bucks. Metal detector find.

C.E.K./D.J.H.

26. 'Catuvellauni', bronze unit of Cunobeline, Mack 246, VA 2095-1 (CCI 89/228).

Obv. bust r. Inscription illegible.

Rev. TASC below exergual line. Bull butting r.

Weight: 1.19g.

Wiltshire. Metal detector find.

C.E.K./D.J.H.

27. 'Catuvellauni', bronze unit of Cunobeline, Mack 249, VA 2099-1 (CCI 89/14).

Obv. CVNO. Pegasus springing r.

Rev. TASC. Victory sacrificing a bull r.

Weight: 2.36g.

'West Wycombe, Bucks.' Metal detector find.

C.E.K./D.J.H.

28. 'Catuvellauni', bronze unit of Cunobeline, Mack 249, VA 2099-1 (CCI 89/229).

Obv. CVNO. Pegasus springing r.

Rev. [T]ASC. Victory sacrificing a bull r.

Weight: 2.33g.

Ascot, Berks. Metal detector find.

C.E.K./D.J.H.

29. 'Catuvellauni', bronze unit of Cunobeline, Mack 249, VA 2099-1 (CCI 89/230).

Obv. inscription illegible. Pegasus springing r.

Rev. inscription off flan. Victory sacrificing a bull r.

Weight: 2.50g.

Ascot, Berks. Metal detector find.

C.E.K./D.J.H.

30. 'Trinovantes', cast bronze 'Apollo' head of Thurock (hoard) type, VA 1410-1 (nearest).

Obv. Helmeted head left.

Rev. Bull charging right.

Weight: 3.025g.

Cleeve Prior, Wores. New Site West, 22 April 1990.

Metal detector find by Mr R. Laight.

This is a remarkable find being so far north-west of the main centre, which is Essex/Kent.

W.A.S.

31. 'Trinovantes', bronze unit of Addedomaros, cf. Mack 273, VA 1646-1 (CCI 89/231).

Obv. head l. with corded hair.

Rev. horse l.; above, pellet; behind, A.

Weight: 1.26g.

'Bicester, near, Oxon.' Metal detector find.

C.E.K./D.J.H.

32. 'Trinovantes', bronze unit, cf. Mack 274, VA 1615-1 (CCI 89/5).

Obv. head l. with corded hair (?).

Rev. horse l. with ring ornaments beneath and above, and pellet below tail.

Weight: 1.89g.

Wharf Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

33. 'Trinovantes', bronze of Dubnovellaunus, Mack 281.

Obv. head left, with wreath over ear.

Rev. horse left, pellet annulet above and below.

Weight: 2.06g. Die axis: 20°.

Cambridge (Arbury Estate), before c. 1986.

M.A.S.B. and M.J.B.

34. 'Cantii', bronze unit. For *obv.* cf. Mack 278 *rev.* and *BNJ* 58, 1988, Coin Register, no. 67 *obv.*

Obv. uncertain animal r., head turned back.

Rev. horse l.

Weight: 1.76g.

Wharf Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

35. Dobunni, copper alloy core of plated stater of VA type 1005-1, c. 35-30 B.C.

Weight: 4.242g. Die axis: 270°. Diameter: 21.5mm.

'On the Fosse Way', within the West Midlands region. Metal detector find.

D.J.S.

36. 'Dobunni' silver 'drachm' or unit, Mack 378; VA 1042-1.

Obv. devolved head, large pellet for chin, scroll and pellets.

Rev. triple-tailed horse left, flower below, 'bird' above.

Weight: 0.865g.

Willersley, Glos. Willersley Barn. Metal detector find by Mr B. Wright.

W.A.S.

37. Dobunni, silver unit, VA 1042-1, Corio Head type, class B, c. 30-15 B.C.

Weight: 1.002g.

Wappenbury, near, Warwickshire, March 1990.

Metal detector find (exact find-spot recorded confidentially in Birmingham City Museum).

D.J.S.

38. 'Dobunni', silver unit, VA 1042-1, Corio Head type, class B, c. 30-15 B.C.

Weight: 1.037g. Die axis: 0°. Diameter: 14mm.

Leamington Spa, near, Warwickshire, 1990. Metal detector find.

D.J.S.

39. 'Dobunni' billon 'drachm' or unit, Mack 378a; VA 1045-1.

Obv. devolved head, OxO on face, scroll below lips.

Rev. triple-tailed horse left, pellet annulet above, 'flower' below.

Weight: 1.16g.

Welford, Warwicks. Welford 'Villa', North Field, 23 March 1990. Metal detector find by Mr R. Laight.

W.A.S.

40. 'Dobunni' silver 'drachm' (broken half) Mack 378a (nearest); VA 1045-1 (nearest).

Obv. Annulet eye, part of nose, curls behind head.

Rev. part of (triple-tailed?) horse left, 'flower' below.

Weight: 0.495g.

Norton and Lenchwick, Wores. Blaney's Lane, Twyford, near Evesham.

Metal detector find by Mr B. Wright.

W.A.S.

41. 'Dobunni', uninscribed, billon 'drachm', Mack 382 var.; VA 1078-1 var.

Obv. devolved head with scroll before nose, pellet in annulet eye, etc.

Rev. naturalistic triple-tailed horse left: vestigial letters as symbols in field.

Weight: 0.985g.

North and Middle Littleton, Wores., Cleeve Hill Romano-British site, August 1989. Metal detector find.

W.A.S.

42. 'Dobunni', fragmentary silver unit, VA 1078-1, Antedrig Head type, class E, c. 10 B.C. A.D. 10.

Weight: 0.794g.

Yapton, near, Sussex, early 1990. Metal detector find.

D.J.S.

43. 'Dobunni', inscribed, billon 'drachm' or unit of Anted. Mack 387 var.; VA 1082-1.
Obv. devolved head with scroll before nose, pellets in annulets etc.
Rev. naturalistic triple-tailed horse left, AN below, TED (Greek theta) above.
 Weight: 0.98g.
 Bidford-on-Avon, Staple Hill Romano-British site, Warwicks., July 1989. Metal detector find by Mr B. Wright.
 W.A.S.
44. 'Dobunni', inscribed, silver 'drachm' or unit of Anted. Mack 387 var.; VA 1085-1 var.
Obv. devolved head with scroll before nose, pellets in annulets etc.
Rev. devolved (tailless, earless and noseless) horse left, AN below, TED (Roman D) above.
 Weight: unrecorded.
 Mancetter, Mancetter Farm, Warwicks., during excavations, on the site of a Claudian-Vespasianic fort, 1980. Found by Mr K. Scott.
 W.A.S.
45. 'Dobunni' silver 'drachm' or unit, Mack 384b (nearest); VA 1095-1 (nearest).
Obv. devolved head with very long lips, various symbols.
Rev. crude triple-tailed horse left, annulet and crescent above.
 Weight: 1.01g.
 Norton and Lenchwick, Wores., Blaney's Lane, Twyford, near Evesham. Metal detector find by Mr B. Wright.
 W.A.S.
46. 'Dobunni', inscribed, base core of plated stater of Eisu. As Mack 388 (gold); VA 1105-1 (gold).
Obv. fishbone pattern (Dobunnic emblem) almost completely gone.
Rev. devolved horse right, wheel below, EISV above.
 Weight: 2.995g.
 Henbury, Wores., Bayliss Farm, August 1989. Metal detector find by Mr L. Phillips.
 W.A.S.
47. 'Dobunni', inscribed, base core of plated stater of Eisu. As Mack 388 (gold); VA 1105-1 (gold).
Obv. fishbone pattern (Dobunnic emblem).
Rev. devolved horse right, wheel below, (EIS)V above.
 Weight: 2.915g.
 Hanbury, Wores., Bayliss Farm, September 1989. Metal detector find by Mr L. Phillips.
 On the same field as nos 46 and 47, have been found contemporary imitations of Claudian asses.
 W.A.S.
48. 'Dobunni', inscribed, billon 'drachm' or unit of Eisu (?). Mack 389; VA 1110-1.
Obv. devolved head with scroll before nose, pellets in annulets etc.
Rev. devolved (tailless) horse left, (ET) above, (SV) below.
 Weight: 1.105g.
 Murcot, Wickenford, Wores., on Romano-British site, September 1989. Metal detector find by Mr W.L. Cooke.
 W.A.S.
49. Base core of plated stater, possibly a Dobunni counterfeit. Not found in Mack or VA.
Obv. (convex side) surface much disintegrated and possibly blank (?).
Rev. (concave side) single-tailed horse right (?), symbols around.
 Weight: 2.205g.
 Wasperton, Warwicks. Iron Age-Roman-Saxon site in back-fill of gravel pit, May 1986. Metal detector find by Mr D. Adams. Warwickshire Museum.
 W.A.S.
50. 'Dobunni' silver 'drachm' or unit, Mack 383 (reverse); VA 1135-1 (reverse).
Obv. devolved head (off flan) X and scroll and crescent.
Rev. prancing horse right, star ornament below.
 Weight: 0.55g.
 Probably Alcester, Warwicks. B.W. Davis Collection, Warwickshire Museum.
 W.A.S.
51. 'Dobunni' silver 'drachm' or unit, Mack 383; VA 1135-1.
Obv. devolved head, three pelleted annulets on face, 'daisy' of pellets, scroll, etc.
Rev. Single-tailed naturalistic horse right; above, annulet with three crescents; various other symbols around.
 Weight: 0.96g.
 North and Middle Littleton, Wores., Cleeve Hill Romano-British site, November 1989. Metal detector find by Mr B. Wright.
 W.A.S.
52. 'Dobunni' silver 'drachm' or unit, Mack 383 (nearest); VA 1135-1 (nearest).
Obv. devolved head, annulet eye, annulet, crescent and two 'daisies' of pellets.
Rev. Single-tailed naturalistic horse right; above, annulet with three crescents, various symbols around.
 Weight: 0.83g.
 Willersley, Glos. Willersley Barn. Metal detector find by Mr B. Wright.
 W.A.S.
53. 'Dobunni', uninscribed, silver 'drachm'. Mack 383; VA 1135-1 (Catti Head type, class I).
Obv. devolved head with crescent before nose, etc.
Rev. naturalistic single-tailed horse right, cross below (mostly off flan), annulet and three crescents above.
 Weight: 0.94g.

Cleeve Prior, Wores., 'new' Romano-British site, September 1989. Metal detector find by Mr R.J. Laight.

W.A.S.

54. 'Icen', silver unit, Mack 419, VA 710-1 (CCI 89/19).

Obv. double crescent emblem, two pellets between crescents and five-fold wreath across field.

Rev. horse r.; above, pellet surrounded by circle of same; below, ANTED monogram and three pellets; two pellets beneath horse's tail.

Weight: not available.

Norton Subcourse, Norfolk, 1985.

C.E.K./D.J.H.

55. Corieltavi, silver unit, VA 877-3.

Obv. blank.

Rev. horse r., large ring of pellets above.

Weight: 1.033g.

Near Leicester. The same site has also produced 18 Roman coins ranging from a Claudian as to bronzes of the House of Valentinian, an Anglo-Saxon sceat, 4 Long Cross cut fractions and pennies of Edward I and Edward III. Metal detector find. Remains in the trade. Published by permission of Mr G. Charman of Format Coins, Birmingham.

D.J.S.

56. Uncertain, silver unit (fragment) (CCI 89/234).

Obv. abstract pattern (crossed wreaths?) decorated with ring, spiral and zigzags in field.

Rev. abstract pattern.

Weight: 0.32g (severely chipped).

Brackley area, Northants. Metal detector find.

C.E.K./D.J.H.

57. Uncertain, bronze unit (CCI 89/7).

Obv. unclear.

Rev. horse l.

Weight: 0.96g.

Manor Farm, Cliffe, Kent. Metal detector find.

C.E.K./D.J.H.

Merovingian coins

58. Gold tremissis, Locosancto (Liesaint, Seine-et-Marne), moneyer Dagoaldus (Prou 852).

Obv. LOCO SANCO (S on its side). Diademed profile bust to right.

Rev. +DACOALDO. Cross with forked ends resting on the rosette of wreath forming inner circle. O and L (inverted) for L O in lower angles.

Weight: 1.27g (19.6gr). Die axis: c. 270°.

Heston, Middlesex. Shown at British Museum September 1981.

M.M.A.

59. Gold tremissis, Huy, moneyer Bertoaldus (c.f. Belfort 1536-9).

Obv. CNO+ [-]TT. Crude profile head to right.

Rev. BERTOAL. Cross on globe, lines extending at an angle downwards from additional cross bar on globe almost to outer circle.

Weight: 1.31g (20.2gr). Die axis: 225°.

Sheppey, Kent, 1970s. Illustrated x2.

M.M.A.

60. Gold tremissis, Briossus (Brioux, Deux-Sevres), Poitiers area, moneyer Chadulfus (c.f. Belfort 970).

Obv. BRIOSSO VICO. Crude profile bust to right, hand and cross before face.

Rev. +CHADVLVS MV. Cross with arms formed by triangles on a globe with a pellet in each angle.

Weight: 1.24g (19.1gr), two holes towards the edge of coin). Die axis: 180°.

Billingsgate, London, spoil, c. 1987. Shown British Museum, August 1989.

M.M.A.

61. Gold tremissis, Catullaco (St Denis, Seine), moneyer Ebrigeselus (same dies as Prou p. 182, 835, pl. xiii, 25)); evidence of a loop-mount.

Obv. CATOLACO. Diademed profile bust to right.

Rev. +EBREGISILO. Anchor-cross on globe.

Weight: 1.24g (19.1gr). Die axis: 180°.

Rochester, Kent (near), early 1990. Acquired by the British Museum (1990-6-22-1).

Another coin in the British Museum by the same moneyer at the mint is from the same obverse die only (1924-10-15-9, without findspot). This moneyer later struck coins in the name of St Denis. Several coins have recently been reported as found 'near Rochester'; it has not been possible to establish the precise provenance of this coin, or its association, if any, with the findspot(s) of the others. The coin has traces of where a mount has been removed, possibly recently. This suggests that it might have come from a grave deposit.

M.M.A.

Sceattas

62. Sceat, Series B (Rigold B1.C). BMC type 27b. London?, c. 690-700.

Obv. oTA[]VIOO, head right with single strand diadem, large eye, pellet in hair; in beaded serpent border.

Rev. oAVNAMVANAOO, bird right on cross flanked by two annulets; in beaded serpent border.

Weight: 1.14g (17.6gr). Die-axis: 180°.

Near Orwell, Cambs. (site recorded on the county Sites and Monuments Register), spring 1990. From same field as two Celtic staters, nos 2-3 above.

Struck from the same obverse die as Rigold B1.C2 (BNJ 30 (1960-1), pl. 3), from the Barham (Kent) hoard, dep. c. 700. The reverse inscription is almost identical to those of Rigold B1.C1/i and B1.C2/i.

M.A.S.B. and M.J.B.

63. Sceat, Series C, BMC type 2 'runic', Kentish, moneyer Æpa.

Obv. a radiate bust right, with 'æpa' in runes.

Rev. devolved standard.

Weight: 1.01g (15.6gr). Die axis: 90°.

Near Chelmsford, Essex. Found by Mr G. Bell in 1990.

This coin conforms to type, although it is a little lighter than usual.

M.J.C.

64. Sceat, Continental Runic, Series D, (*BMC* 2c (North 168). Frankish, c. 700–710.

Weight: 1.09g (16.8gr). Die axis: c. 0° as illustrated.

Bredgar (near), Kent. Found by Mr A. Crampton, 1989.

M.M.A.

65. Sceat, type 8 (Series D). Lower Rhineland region, c. 700–10.

Obv. cross and four pellets with pseudo-letters in the border.

Rev. standard decorated with four Ls and central annulet, in border a cross and a zig-zag.

Weight: 1.17g (18.0gr).

West Winch, Norfolk (near). Found in 1989 near West Winch, to the south of Kings Lynn, and shown to us through the good offices of Andrew Rogerson at the Norfolk Archaeological Unit. The exact site is recorded on the county Sites and Monuments Register (no. 25465).

M.A.S.B. and M.J.B.

66. Sceat, 'porcupine', Series E (Metcalf E, with extra pellets in rev. field). Secondary phase, Frisia, c. 715–30.

Weight: 1.74g (26.8gr, high weight due to a blob of extra silver, possibly the remains of a mount). Die axis: c. 0° as illustrated.

Weston, Herts., 1989. Found by Mr T. Hing.

M.M.A.

67. Sceat, 'porcupine', Series E. (obv. as Metcalf D). Secondary phase, Frisia, c. 715–30.

Rev. similar to Metcalf H, except lines in lower part of standard are parallel with the lower border, not at an angle to it.

Weight: 1.06g (16.3gr). Die axis: 90°.

Isle of Wight. Shown at the British Museum (where grid reference is on record), October 1989.

M.M.A.

68. Sceat, Series F, c.f. *BMC* 24b (c.f. North 62). Frankish, c. 700–10.

Obv. Diademed head to right, pseudo-legend. Same die as a coin in the British Museum ex Aston Rowant hoard (1971–12–16–76).

Rev. Cross on steps, an annulet at the ends of the three upper arms, pseudo-legend (details almost illegible as a result of corrosion).

Weight: 0.93g (14.3gr, chipped and corroded). Die axis: 0°.

Datching, Sussex, October 1984.

M.M.A.

69. Sceat, Series F, c.f. *BMC* 24b (c.f. North 62). Frankish, c. 710–20.

Obv. Diademed profile bust to right, oXo behind head, pseudo letters before face.

Rev. Circumscription legend of pseudo letters. Cross on step, with an annulet at end of top and side arms.

Weight: 1.06g (16.4gr). Die axis: c. 45°.

Higham, Kent, April 1990. Found by Mr R. Fifield.

This coin is a die-duplicate of a coin in the British Museum (1935–11–17–247, ex Barnett Bequest). These two coins are both lighter, and presumptively slightly later, than the coins of this type present in the Aston Rowant hoard.

M.M.A.

70. Sceat, Series R, *BMC* 2 (North 165). East Anglia, moneyer Wigred, c. 730–50.

Weight: 0.77g (11.8gr, very base metal). Die axis: c. 345°.

Wolverton, Bucks., 1981.

This coin is very similar to coins of the type and moneyer in the Middle Harling hoard, Illustrated x2.

M.M.A.

71. Sceat, Series U, *BMC* 23e (North 85). Uncertain area of issue, c. 720–40.

Obv. Standing man with head profile to right, holding two crosses.

Rev. Wolf whorl.

Weight: 0.74g (11.4gr). Die axis: 0° as shown.

Thames foreshore at Lambeth, London, June 1990. Found by Mr Richard Blacklaw-Jones.

M.M.A.

72. Sceat, Eadberht of Northumbria, Booth Biii, 21 (North 178).

Obv. EOTBERHTVI.

Rev. Quadruped to left, three pellets below raised foreleg, also three smaller pellets under animal, a single pellet in curve of tail.

Weight: 1.25g (19.3gr, has been cleaned). Die axis: 135°.

Stutton, near Tadcaster, N. Yorkshire, in 1986. Apparently an isolated find.

Different dies from the two coins of this variety listed by J. Booth in *Sceattas in England and the Continent*, edited by David Hill and D.M. Metcalf, BAR British Series 128, 1984, pp. 71–111.

P.G.S.

Carolingian coin

73. Late ninth- to early tenth-century denier in the name of Charles the Bald, Poitiers, c.f. *MEC* I nos. 952–8, and pp. 238–9.

Obv. +CARLVS REX F. Cross pattée.

Rev. +MET X VILLO. Monogram.

Weight: 1.61g (27.8gr, cracked around inner circle, not pecked). Die axis: c. 270°.

Chigwell, Essex (precise findspot on record in the British Museum). Found by Mr Malcolm Berry while

gardening in 1963, and shown at the British Museum in 1990 by Mr I. Stewart, Gravesend.

M.M.A.

Later Anglo-Saxon coins

74. Offa, Group II, cf. Blunt 55-6 (North 287). Canterbury, moneyer Ethelvald.

Obv. OFFA / REX in two lines, pelleted line with forked ends between them.

Rev. EDEL / VALD in two lines, pelleted line with pattée ends between them.

Weight: 1.11g (17.1gr chipped). Die axis: 90°.

Borley, Essex (just over the county border from Sudbury). Found by Mr Richman near a penny of Ecgherht (no. 17 below), and shown at the British Museum, 20 October 1989.

M.M.A.

75. Cynethryth, wife of Offa, Portrait type (North 339). Moneyer Eoba, c. 787-92.

Obv. EOBA: bust r., trefoils of pellets behind head and in legend.

Rev. +: C'YNE ð RY ð REGINA, around M.

Weight: 1.10g. Die axis: 240°.

Llanbedrgoch, Anglesey (Gwynedd), August 1989. Metal detector find (find-spot recorded). Now in National Museum of Wales.

Same obverse die as SCBI Norweb 93 and BMC 61, which shows similar die-damage. The reverse die appears to be new.

E.M.B.

76. Coenwulf, BLS Group IB, 72 (North 352). Rochester, Ealhstan, c. 810-c. 820.

Obv. +COENVV FRES M (S retrograde), bust to right.

Rev. +EALHSTAN MONETA, cross inline.

Weight: 1.35g (20.8gr, cracked and bent). Die axis: 270°.

Little Kimble, Bucks. (Exact findspot on confidential record in Bucks. County Museum, Aylesbury.) Found by Mr C.P. Lawson, spring 1990.

Different dies from the two coins listed in BLS. The spelling RES for REX, not previously recorded in this group, recalls the forms in S found on East Anglian coins of Beonna and Athelstan I.

M.M.A.

77. Ecgherht of Wessex, Portrait/Monogram type, BMC i (North 573). Canterbury, moneyer Diormod, c. 825-8.

Obv. +ECGHERHT REX.

Rev. +DIORMOD MONET (NE ligatured).

Weight: 1.18g (18.2gr, chipped). Die axis: c. 270°.

Borley, Essex, October 1989. Found by Mr Richman near a penny of Offa (no. 74 above).

M.M.A.

78. Athelstan, Bust Crowned type, BMC viii (North 673). Southern group, moneyer Berhtred.

Obv. +ÆDELSTAN REX.

Rev. +BERHTRED MONET.

Weight: 1.23g (19.0gr). Die axis: 270°.

Carlisle, Cumberland, 1988. Found in excavations and published here in advance of the site report by kind permission of the director, Mr G. Kievill.

Although the moneyer is recorded in CTCE for Edward the Elder, Edmund and Eadred, this is his first known coin for Athelstan, and his only known coin for any reign of the Bust Crowned type. No mint-signed coins of the moneyer are extant, but the Southern style of the present coin confirms his location in that area; no die-link which might establish the mint has been found.

M.M.A.

79. Eadred, HT1 type (North 706, CTCE 96). North Eastern mint, moneyer Hunred.

Obv. +EADRED REX Z.

Rev. HVN / RED I.

Weight: 1.25g (19.3gr). Die axis: 225°.

Newark, Notts., March 1990. Found during gardening by Mrs P.M. Horn (precise findspot on record in Newark and British Museums).

M.M.A.

80. Eadred, Bust Crowned type (North 715, CTCE 228). Norwich, moneyer Boge.

Obv. +EADRED REX.

Rev. +BOGE HON-TOV N- (T inverted).

Weight and die axis not recorded.

Thetford, Norfolk (near), spring 1990. Found by Mr D. Glover.

M.M.A.

81. Eadwig, Circumscription Cross type (BMC v), probably Exeter, moneyer Iohan.

Obv. [+E]ADVIG REX ANGLO[].

Rev. +IOHAN MON[] EC+HIO.

Weight: 0.39g (5.9gr; very corroded, part of edge missing). Die axis: 180°.

Moreton, Wirral, Cheshire, 1987. Found in excavations, stratified in the upper fill of a ditch.

Circumscription Cross coins of this reign are rare: CTCE records only five. The moneyer Iohan was not previously known for Eadwig, or in the pre-Reform types of Edgar, but is recorded in the post-Reform type at Exeter. (The Iohan working in the reigns of Edward the Elder, and of Athelstan at Chichester, cannot be the same person.) The obverse die is not shared by the only known Exeter coin by a different moneyer, but the style of the coin would be compatible with an attribution to this mint. The characteristically heavy edge is present although it has been eroded. The letters following what appears to be the [I-X]EC of the mint signature can be paralleled on other CC coins of the reign, including one Exeter piece where IIII appears at the end of the obverse legend.

R.P.

82. Æthelred II, First Hand type (Hild. B1: North 766), c. 979–85. Mint uncertain, moneyer Godwine.
Obv. [LR]ED REX A[.]
Rev. [GODPINE M].

Fragment. Weight: 0.99g (15.3gr). Die axis: 90°. Hempnall, near, Norfolk. Found near Hempnall, some 14 km south of Norwich (site recorded on the county Sites and Monuments Register). It was shown to us in November 1989 through the kindness of Andrew Rogerson of the Norfolk Archaeological Unit.

The coin is of southern style (Dolley and Talvio's 'southern A'). The moneyer Godwine is known to have struck coins of this type at Exeter, London, and Stamford, but given the style the latter is most unlikely. No die-link with this coin has been found.

M.A.S.B. and M.J.B.

83. Æthelred II, Last Small Cross type (North 777). Shaftesbury, Moneyer Ælfwine, c. 1009–1017.

Obv. +ÆDELRED REX ANG.

Rev. +ÆLFWINE ON SCEPTIE.

Weight: 1.40g. Die axis: 100°.

'Sully Moors', near Cardiff, South Glamorgan. August 1989. Metal detector find (find-spot recorded). Now in National Museum of Wales.

Same dies as Doubleday (Glen., 6.x.87), lot 436.

E.M.B.

84. Edward the Confessor, Short Cross type, *BMC* ii (North 818). Steyning, moneyer Wulfgæt, c. 1048–50.

Obv. +EDPI RD REX.

Rev. +PVLFIET ON STÆ.

Weight: 0.90g (13.9gr, small corrosion hole). Die axis: 0°.

Findspot not known.

The moneyer of this coin (British Museum, 1989–10–18–2, presented by A.H. Baldwin & Sons) was hitherto known only in the following Expanding Cross type.

M.M.A.

85. Edward the Confessor, cut-halfpenny, Pyramids type, *BMC* xv (North 831). Uncertain mint, moneyer, Godwine?, c. 1065–6.

Obv. [] RD REX.

Rev. [] PINE ON II [].

Weight: 0.49g (7.5gr). Die axis: 0°.

Thames Exchange, London spoil. Shown British Museum June 1990. Found by Mr T. Yenall.

M.M.A.

Post Conquest coins

86. William I, Canopy type, *BMC* iii (North 843). Lincoln, moneyer Godric, c. 1070–2.

Obv. +PILLEMVS REX I.

Rev. [+] GODRIC ON LINCOL.

Weight: 1.26g (19.4gr).

Graham area, Lincs. Found by Mr Rock, early 1990.

The moneyer was not previously recorded at the mint in this period.

M.M.A.

87. William I, Two Sceptres type, *BMC* iv (North 844). Warwick, moneyer Thurcil, c. 1072–4.

Obv. +PILLEM REX ANGL.

Rev. +DVRKILONPOEREI.

Weight: 1.31g (20.2gr, cracked). Die axis: 0°.

Darenth, Kent. Found in January 1989 at Old Mill Farm by Mr A.P. Hobby when the site was being excavated for ballast and shingle. Offered *NCirc* May 1990, 2493.

Thurcil was previously recorded in types III and V, but not in type IV. The obverse die is different from that of the coin by Lifinc, *SCBI* Midlands 535.

M.M.A.

88. William I, Two Sceptres type, *BMC* iv (North 844). Canterbury, moneyer Man, c. 1072–4.

Obv. +PILLEM REX ANGLOR.

Rev. +MAN ON CANTILBI.

Weight: 1.34g (20.7gr). Die axis: 90°.

Seasalter, Kent. Found on the foreshore in the spring of 1987 by Mr C. Wren.

Same dies as *BMC* 229. Coins nos 89 and 101 below were found at the same place in Seasalter, along with a small hoard of twenty-six Short Cross coins (to be published later). The site also yielded fragments of a penny of William II, *BMC* type iii, in too poor condition to identify further or to illustrate here. At the Inquest held at Canterbury on 2 July 1987 the Short Cross coins were declared treasure trove, but not the rest. Evidence was given of changes in the shore line since the eleventh century, and of the port and market activities there in the medieval period. The coins were returned after recording to the finders, Mr Bernard Waite and Mr Christopher Wren, who then kindly donated them to the Canterbury Museum. I am indebted to the finders, who allowed me to examine the coins and to the curator of the Canterbury Museums, Mr K.G.H. Reddie and his colleague Mr D. Dawson, for their help, and for permission to publish the coins here.

M.M.A.

89. William I, Paxs type, *BMC* viii (North 849). London, moneyer Edric, c. 1083–6. Same dies as *BMC* 792.

Obv. [PIL]LEM [REX].

Rev. +E[] DR[] IC ON L[] IND[] N.

Weight: 0.69g (10.6gr, chipped and very oxidised). Die axis: 0°.

Seasalter, Kent. Found on the shore in the spring of 1987 by Mr B. Waite. (For background, see no. 88 above.)

M.M.A.

90. Norway, Olaf Kyrre, 1067-93, penny, Malmer Period IIb, Gresli class Cii, similar to Shive pl. III. 20, but from different dies.

Obv. +v[] . Devolved bust to left.

Rev. +A+IO (unbarred A). Die axis: 180°.

Raunds, eastern Northants. Found on 9 May 1984 in excavations directed by Michel Audouy for the Northamptonshire County Council Archaeology Unit as part of the Raunds Project at Raunds, Langham Road, Northants. (SP998732). Permission to publish the coin here has kindly been given by the County Archaeologist.

A series of rescue excavations in and around Raunds has been jointly run by the County Council and English Heritage (G.E. Cadman, 'Raunds 1977-1983: an excavation summary', *Medieval Archaeology*, 27 (1983), 107-22; B. Foard and T. Pearson, *Raunds Area Project First Interim Report, Northamptonshire Archaeology*, 20 (1985)). The coin was found in evaluation trench BST13, ultimately subsumed within an area excavation known as Raunds, Langham Road. The occupation sequence revealed intensive Late Saxon and Medieval activity, including the construction of village tenements; the trench in which the coin was found straddled the back line of these. The coin lay in the silt fill of a small cut, possibly a posthole, sealed by a layer which was probably a cultivation horizon. Pottery from the fill included St Neots type ware of the later tenth and eleventh centuries, a summary of the excavation has been published in B. Dix (ed), 'Raunds Area Project Second Interim Report' *Northamptonshire Archaeology*, Vol 21 (1986-7), 18-24.

M.A., M.M.A. and G.E.C.

91. William II, Cross Voided type, *BMC* iii (North 853), Bristol, moneyer Barcwit, c. 1092-5.

Obv. +ILLIMCH REX I.

Rev. +BIRCPIT ON BRIL.

Weight: 1.29g (19.9gr). Die axis: 0°.

Hampton Wafer, near Leominster, Herefords., 1968. Found by Mr T. Burton.

The moneyer of this coin (British Museum, 1968-5-1-1) was formerly known only in types iv and v, and was cited by L.V. Grinsell in *The History and Coinage of the Bristol Mint* (1986), p. 40 from this coin.

M.M.A.

92. William II, Crosses Pattée and Fleury type, *BMC* type iv, c. 1095-8, London?, Ægelword?

Obv. [] PIL [] M [] .

Rev. +IE [] EL [] ONLIII (NL ligatured), solid fleurs.

Weight: 0.79g (12.2gr), fragment. Die axis: 180°.

Marham, Norfolk. Found spring 1988 from the same site as the Edward the Confessor cut farthing ('Coin Register 1987', no. 161). The finder also reported a William II, type ii cut-halfpenny from the same site, though it has been disposed of.

M.A.S.B. and M.J.B.

93. William II, penny, Cross Fleury and Piles type, *BMC* v (North 856), Canterbury, Winedi, c. 1098-1100.

Obv. +PILLELM RI.

Rev. +PINDI ON [---] TI.

Weight: 1.20g (18.5gr). Die axis: 270°.

Parish of Knotting and Souldrop, Beds. (Exact findspot on confidential record in Bedford Museum). Found by Mr Richard Martin, on land owned by Mr Richard Parrish, in January 1990; shown at the British Museum by Miss C.R. Wingfield of Bedford Museum. (Illustrated by reductions from enlarged photographs.)

M.M.A.

94. Henry I, Annulets type, *BMC* i (North 857), Colchester, moneyer Æelfsi, 1100-c. 1102.

Obv. +H[N]RI RE+NL (NL ligulate).

Rev. +IELFSI ON COLECE.

Weight: 1.06g (16.3gr, small corrosion hole). Die axis: 0°.

Tutbury, Staffs., 1990. Found on the bank of the river Trent near Tutbury Castle.

This coin (British Museum, 1990-6-23-1) is a die duplicate of the only other recorded coin for the type at the mint, Lockett 1042, showing that the mint signature lacks the final S included in the reading in the sale catalogue.

M.M.A.

95. Henry I, Profile /Cross Fleury type, *BMC* ii (North 858), London, moneyer Ordgar, c. 1102-4.

Obv. +HENRIC REX (C and R ligatured, resulting in a letter resembling an L with a loop at the top).

Rev. +ORDGHR ON LVN.

Weight: 1.30g (20.0gr). Die axis: 180°.

Wimborne (near), Dorset, early 1990. Found by Mr G.H.D. Hoskins.

This coin is from different dies from the only other recorded example, Sotheby 19.vi.1984, 131.

M.M.A.

96. Henry I, cut-halfpenny, Annulets and Piles, *BMC* type iv (North 860), London, moneyer Sperling, c. 1107-08.

Obv. +HEN---

Rev. +SPER---

Weight: 0.62g. Die axis: 0°.

Alcester, Warwicks., Bypass route, end of Mill Road, July 1989. Metal detector find by Mr J. Lewis.

W.A.S.

97. Henry I, Pointing Bust and Stars type (*BMC* vi), Southwark, moneyer Leofwine, c. 1110-2.

Obv. HENRI REX.

Rev. LEOPINE OS SYTHIV (?).

Weight: 1.14g (21.6gr). Die axis: 225°.

Alcester, Warwicks. In a field almost opposite Cherry Trees Motel, 30 March 1990. Metal detector find by Mr B. Wright.

W.A.S.

98. Henry I. Cross in Quatrefoil type, *BMC* ix (North 865). Chichester, moneyer Godwine, c. 1112–14.

Obv. +HENRI RE.

Rev. +GOD[P]INE ON CICES (only parts of letters of mint-signature legible, but enough visible for attribution to be certain).

Weight: 1.26g (19.4gr, snicked). Die axis: 270°.

Aldworth parish, Berks. (exact find-spot on record in Newbury Museum). October 1989.

Godwine was hitherto recorded at the mint only in types viii and xi. If the association of type ix with types v and vi is accepted, this is his earliest recorded coin.

P.C.

99. Henry I. Double Inscription type, *BMC* xi (North 867). Southwark, Lifwine, c. 1118–20.

Obv. +HEN[] RE[X].

Rev. +L[]F[P]INE ON[] +SVTP[] [].

Weight: 1.24g (19.1gr, snicked). Die axis: c. 180°.

Eynesford, Kent. Found by Mr A. Crampton, 1989.

Different dies from the only recorded coin in the Hunterian Museum, University of Glasgow.

M.M.A.

100. Henry I. Cross and Annulets type *BMC* xii (North 868). Norwich, moneyer Stanhard, c. 1122–4.

Obv. +HENRICVS R.

Rev. +STANhARD ON NO.

Weight: 1.29g (19.9gr, snicked). Die axis: 180°.

Felthorpe, Norfolk, spring 1988. Found by Mr John Lowe.

The moneyer was not previously known in this type, although recorded in types vii, viii and xiv. The type is otherwise known at the mint only for Etstan (Glendining 2.xi, 1988, 88).

S.M.

101. Henry I. Smaller Profile/ Cross and Annulets type, *BMC* xii (North 868). Romney(?), moneyer --lwacher, 1122–4.

Obv. +HENRIC[VS] R.

Rev. [] LPACHER: ON RI[] [], no punctuation following ON.

Weight: 0.74g (11.4gr, snicked). Die axis: 180°.

Seasalter, Kent. Found on the shore in the spring of 1987 by Mr C. Wren. (For background see no. 88 above.)

The letter following the initial letter R of the mint name is an upright, and is certainly not an 'O', so Rochester may be ruled out. This leaves Romney (RVME) as the only mint beginning with R at this period. Romney was previously known in types ix and xiii, but is not recorded in the long period between, so a 'new' moneyer would not be unexpected. The moneyer's name probably has two letters preceding the -lwacher, and is unrecorded at any mint.

M.M.A.

102. Stephen, cut halfpenny Watford type, *BMC* i, Worcester, uncertain moneyer, c. 1135–41/50.

Obv. [] [] NER [] []

Rev. [] [] ON: [] [] IREC:

Weight: 0.740g (11.42gr). Die axis: 0°.

Sandwell, West Midlands. Found during excavations on the site of Sandwell Priory, directed by Dr M.A. Hodder. I am grateful to Sandwell Metropolitan Borough Council for permission to publish it here.

The mint signature must be PIREC for Worcester. Although the moneyer's name is off the flan the spacing of the surviving letters suggests very strongly that the most likely candidate is Wulfric.

D.J.S.

103. Scotland, William I. cut halfpenny, without mint name, but Edinburgh, moneyer, Hue Walter, c. 1205–30. (Seaby IV 5029).

Obv. +---LAM

Rev. --EWALT--

Weight: 1.32g. Die axis: 90°.

Easenhall, Warwicks., October 1984. Now Warwickshire Museum. Metal detector find by Mr M.F. Turner.

W.A.S.

104. Scotland, Alexander II, 1214–49, penny, Stewart variety (a). Roxburgh, moneyers Alain and Andrew.

Obv. A[]LEXAN[]DER REX, crowned bust right with sceptre.

Rev. ALAIME A. ND[]REV[].

Weight: 1.35g (20.8gr). Die axis: c. 270°.

Hatch Warren, near Basingstoke, Hants. Found by Mr B. Elphinstone in November 1988.

The dies are different from those recorded in Burns for this rare combination of moneyers' names.

G.T.D.

105. Henry III Irish Long Cross cut farthing of Dublin mint, moneyer Ricard, Seaby, *Coins and Tokens of Ireland* 4243B.

Obv. (HENRICVS) RE (XIII). Portion of crowned bust in triangle showing hand holding sceptre.

Rev. (RICARD) OND (IVE). Portion of long cross pommée voided, etc.

Weight: 0.255g.

Hanbury, Wores. In field on Bayliss' Farm, Jan 1990. Metal detector find by Mr L. Phillips.

W.A.S.

106. Contemporary imitation of Irish halfpenny of Edward I, 'Dublin' mint.

Weight: 0.50g.

Maynooth, Co. Kildare. Found by Mr R. Elphinstone in 1982.

G.T.D.

107. Norway, Eric II Magnusson, 1280–99, half sterling, Nidaros mint. (Schive, 22).

Obv. +ERIC MAGn REX NORVE (OR ligulate).

Rev. CRVX SCA III V XPI.

Weight: not recorded.

East of Winchester, Hants., 1989 (precise location on confidential record in the British Museum). Found by Mr F. Meadows.

Eric was the father of Margaret, Queen of Scots, 1285–90, known as 'The Maid of Norway'. (Not illustrated.)

G.T.D.

108. Sterling of Arnold V, count of Loos (1279–1323).

Obv. +COM(ESARN)OLDVS rosettes by head, pellets by neck.

Rev. MON(E(TA)COM)ITIS.

Weight: 1.16g. Die axis: 0°.

Near Great Dunmow, Essex. Found by the contributor in 1989.

N.J. Mayhew has commented that this is probably his no. 75, but this specimen shows the obverse legend ends with:, and the N should be corrected to an M on the reverse.

M.J.C.

109. Gold écu of Philip VI, King of France, first issue (1337), Duplessy 249.

Weight: 4.46g. Die axis: 320°.

Near Bere Regis, Dorset.

B.J.C.

110. Gold gulden of Emperor Sigismund (1410–37), Frankfurt mint.

Weight: not recorded.

Weybourne, Norfolk. Found by Mr G. Fields in 1986.

B.J.C.

111. 'Schilling' of Dietrich III Damerau, bishop of Dorpat (1379–1400).

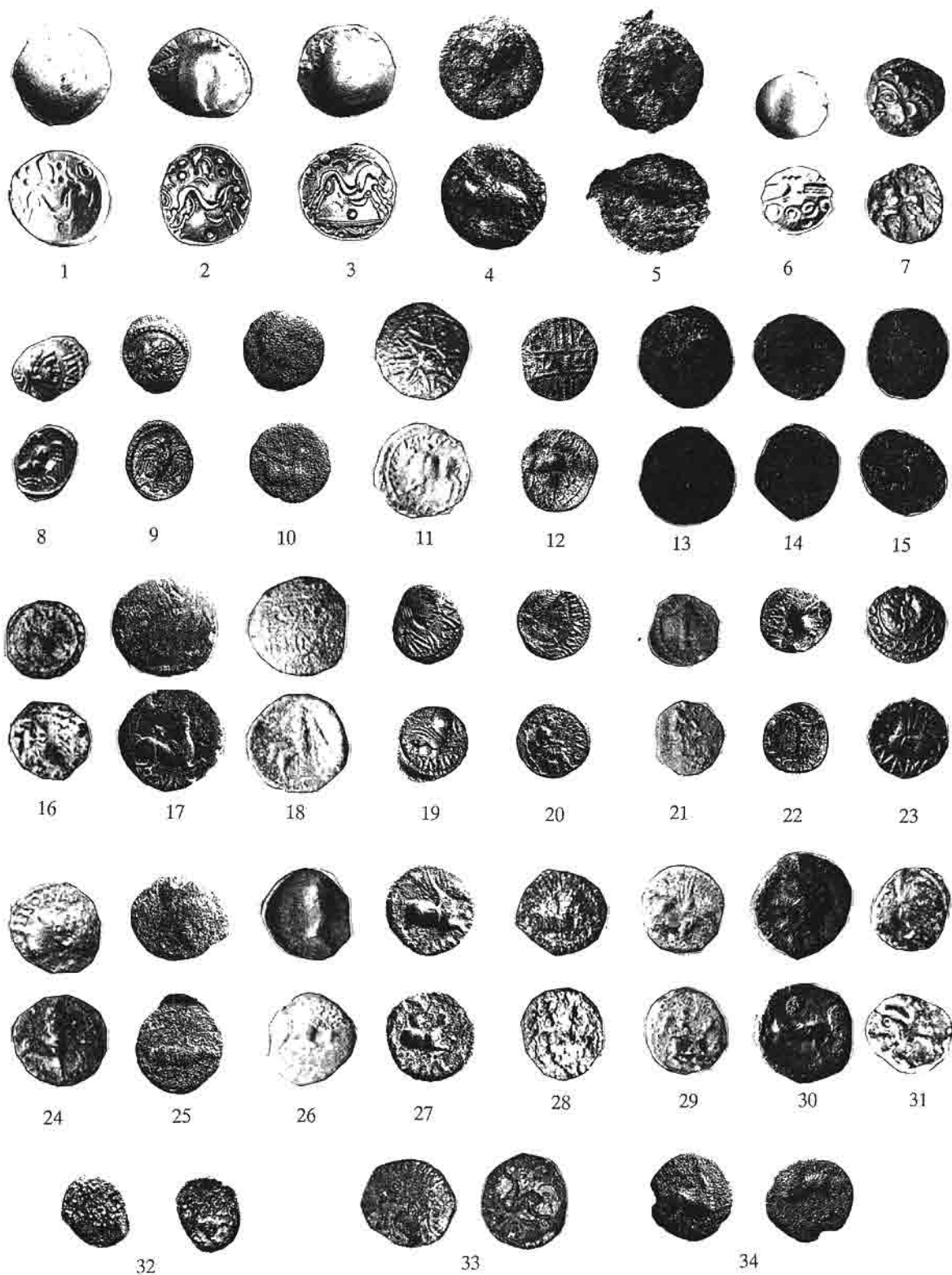
Obv. +TIRICVS EPV.

Rev. +MONETA TRA.

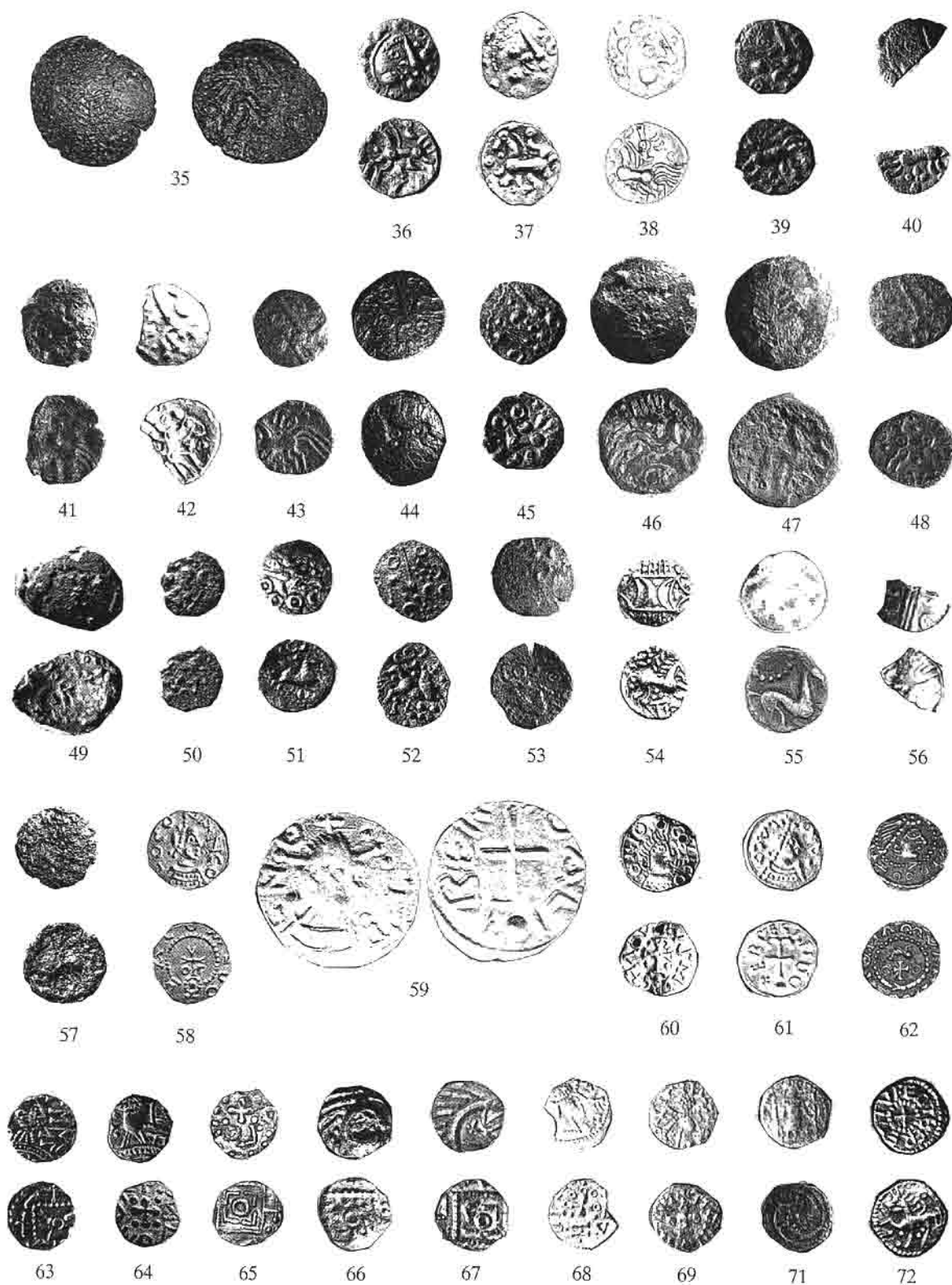
Weight: not recorded.

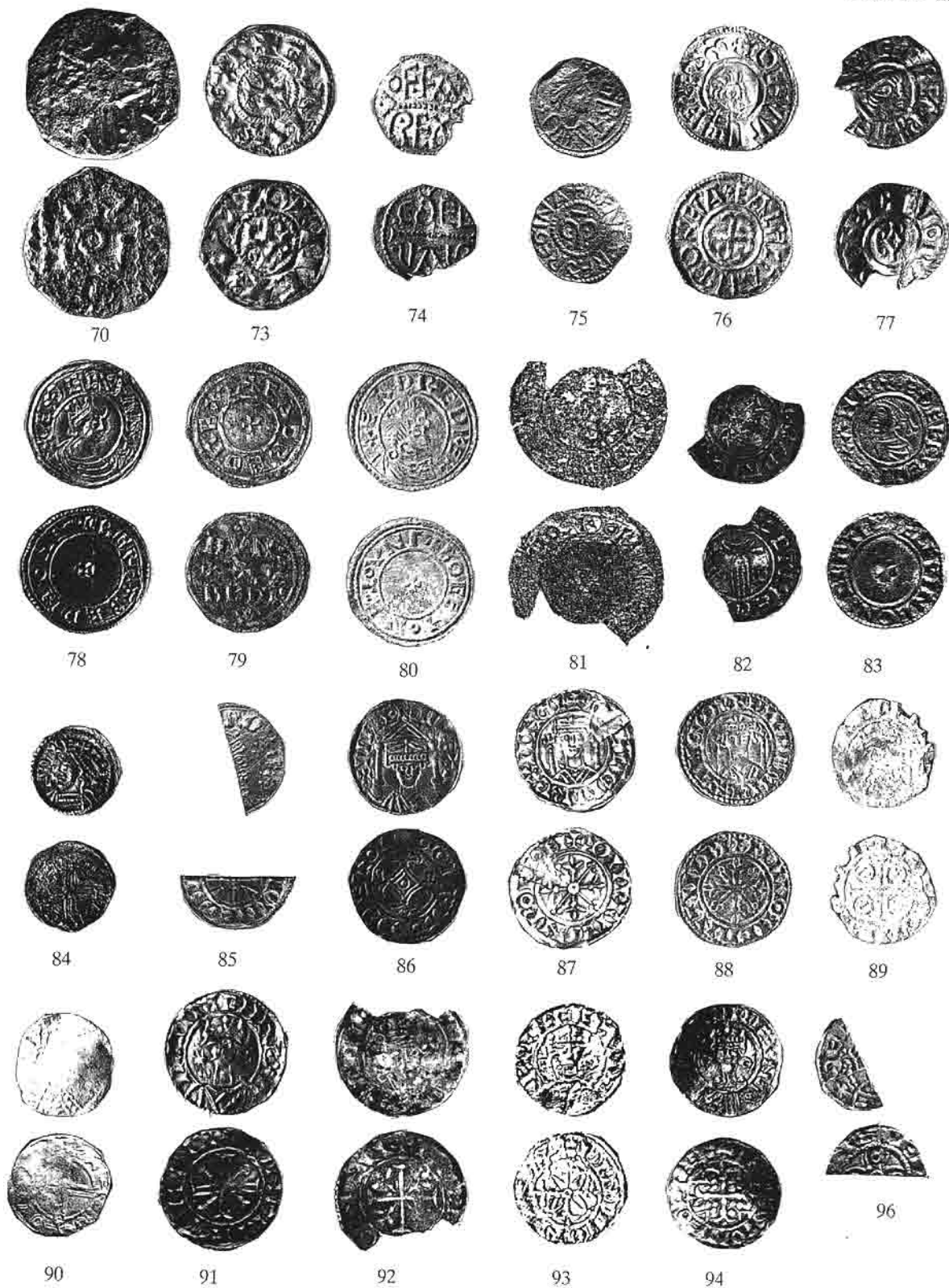
South Wheatley, Notts. Found by metal detector in 1989.

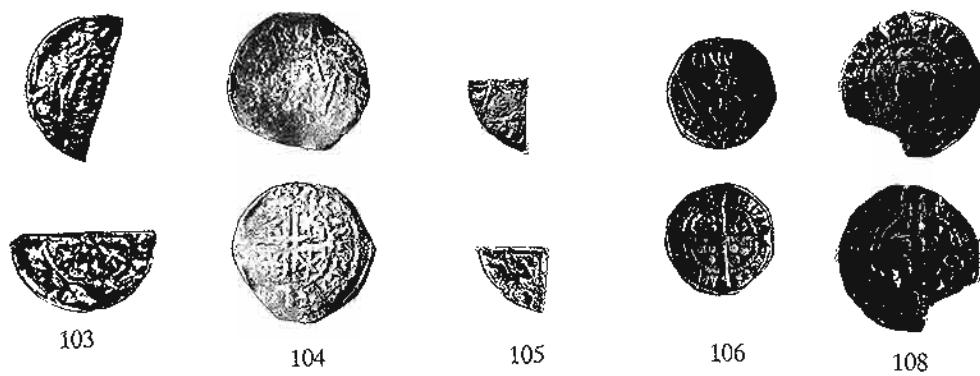
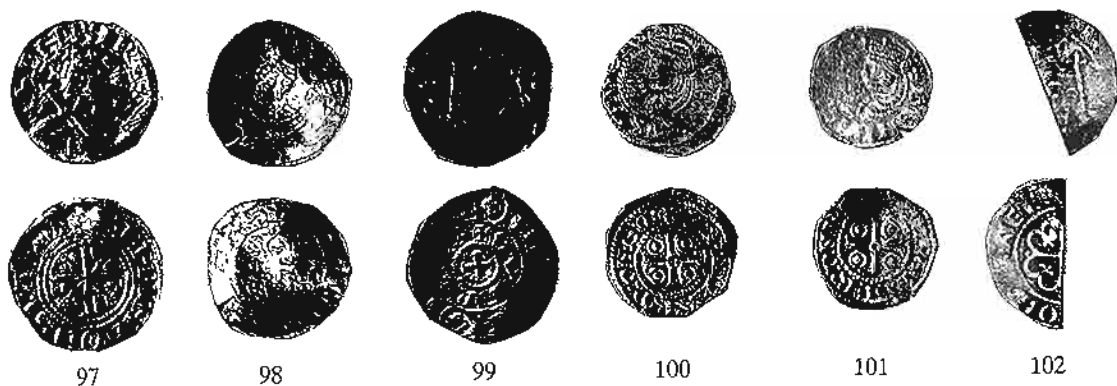
P.J.S.



COIN REGISTER (1)







REVIEWS

The Art and Craft of Coinmaking: A History of Minting Technology. By DENIS R. COOPER. London, Spink and Son, 1988, pp viii + 264.

THIS book represents a brave attempt to provide a general survey of the history of coin manufacture, accessible to 'historians, engineers and the interested layman' as well as numismatists. It is essentially divided chronologically into three sections: to AD 1500; 1500–1780 and 1780 to the present, corresponding to the periods of manual operations, early machine coinages and the modern industrial age. Within these the various processes of coin manufacture are generally discussed in separate chapters. The book's main strengths lie in its readability and the number and range of the illustrations – the result partly of the author's extensive travels, visiting European mints and examining the actual machines used in them. In bringing these to our attention alongside more familiar images the author has done a great service. Add his great practical knowledge of modern minting and the result should stand us in good stead for quite some time: it is already hailed as a 'standard work' on the subject. Does it justify that status?

The second half, chapters 12–19, covering 1780–1939, and 20 (a coda on post-war minting) are, as may be expected, authoritative and full of information, though a case could be made for clearer explanatory diagrams, especially of presses such as Uhlhorn's. It is in the earlier chapters, which deal with less well documented periods, that we encounter problems. In short, while there is much of value, there are too many vague, unsupported or incorrect statements which might mislead the unwary. To take a few of the more obvious, mainly British, examples:

p. 17: endpiece: the mural in the House of the Vettii may be nothing to do with coining;

p. 34: the 'earliest surviving English trial plate' of 1279 has recently been shown to be a fragment of a monetary ingot;

pp. 41–2: Elizabeth I's visit to 'all her mynts' means just that – Tower I, Tower II and Mestrell's operation;

p. 47: Briot's main techniques at Edinburgh were Taschenwerk and the screw press, as is correctly stated on pp. 65–6. Briot did use Walzenprägung for the 'Stirling' turners of the 1630s, which are not mentioned. (Briot's work in Paris and London is treated very sketchily throughout);

p. 54: there is no evidence from the coins that Mestrelle used a collar (quite the opposite) – the author's reconstruction of his methods is distinctly implausible;

p. 61: on cylindrical dies: 'the engravings must have worn out rapidly in service . . .' This is possible, but Moser and Tursky (*Die Münzstätte Hall in Tirol 1477–1665*, Innsbruck 1977, p. 128) tell us that high

outputs, of 50,000 or more Marks of silver per set of dies, were achieved late in the sixteenth century. Flaws are regularly to be seen on the products of rotary coining, but these appear to be the result of the loss of small flakes of metal at an early stage, leaving damaged but serviceable and stable dies.

p. 62, fig. 58: this is an experimental 'die';

p. 66, fig. 64: the first coin is not 'some form of test' (see main text) and is not Briot's. It is one of Falconer's products, and typical of his coinage;

p. 66: rotary coining of farthings dates from James I's reign; experiments using the technique were even made late in Elizabeth I's time;

p. 73: the 'sway' press is an unnecessary elaboration: it is simply a very crude Taschenwerk. (The term 'sway' press, incidentally, as used by Sir James Hope at Edinburgh in 1640 seems to mean 'screw press', as opposed to the 'oval' press, or Taschenwerk);

pp. 101–2: the Pepys reference [of 19 February 1661] is quoted in the wrong context. It refers, not to Simon's milled coins, but to the poor standard of the hammered coinage of the new reign, which was only then coming into production and for which Simon had also made the dies.

These are nearly all 'unforced errors' and are perhaps signs of undue haste in composing the book. This is evident elsewhere in a certain amount of repetition, in the meaningless caption to fig. 3, and in the juxtaposition of figs 33 and 34, two versions of the same scene, but purporting to show different mints. The reviewer was, at a late stage, invited to check chapters 1–3 (*sans* illustrations); this is duly acknowledged, but the suggestions made appear to have been ignored.

Another important and useful feature of the 'standard work' is its bibliography, but that provided is a series of generalised references, apparently an afterthought and of little utility, e.g.

*41 *Occidental Encyclopedia*

42 Pepys, Samuel – *Diary* (11 vol., Cambridge 1970–83)*

The reader is little the wiser. Important references are also absent, for instance Moser and Tursky on Hall, and Poullain's account of Briot's coining methods in Paris. The book also gives the impression that few actual coins have been examined – and it is the coins themselves which provide useful evidence in the earlier periods.

The above comments notwithstanding, this book is required reading, especially for its later sections. There is much to enjoy elsewhere: bas-reliefs (pp. 22–4), Klipwerk and tilt-hammers (pp. 74–8), for instance. Since no other is likely to appear, it will for a long time form the standard reference on the subject.

It is a considerable achievement, but readers should be aware of its shortcomings and accordingly cautious in using it.

EDWARD BESLY

Celtic Coinage of Britain. By R. D. VAN ARSDELL. London, Spink, 1989. 584pp, 54 plates.

THIS book is intended to replace R. P. Mack's *The Coinage of Ancient Britain* (1953, revised 1964 and 1975), which had in turn replaced John Evans's *The Coins of the Ancient Britons* (1864-90). It has four main sections. The first section provides some fifty pages of introductory material; the second is the catalogue, and runs to some 400 pages; it is followed by concordances, a list of hoards, maps, bibliography, etc. (150 pages); finally come the fifty-four plates, which group together in one place all the illustrations (mostly clear) which had also been printed in the body of the catalogue.

'The appearance of Bob Van Arsdell's *Celtic Coinage of Britain* is an event of considerable importance in Celtic coin studies. . . . In bringing together an impressive battery of analytical techniques, he has placed the study on a new, and scientifically sound, footing. . . . What is presented here is a well-ordered, well-dated series from which the clutter of old preconceptions has been totally stripped.' So the eminent author of the foreword. A review cannot, of course, look at every part of such a long book as this, and I wish here to consider only some aspects, to show how misplaced are the foreword's claims.

At its most basic level, a book such as this should provide a reliable listing of the material it covers. It should be complete, accurate and easy to use. VA is reasonably easy to use, although the actual catalogue is so long (only two or three coins per page!) that it is rather cumbersome. Indeed, for the identification of coins, I have found that it is simpler to ignore the catalogue and just use the plates; they are more compact and their captions give sufficient information about origin and date. Most of the additional information in the catalogue is fairly unhelpful: some 'identifying points' which are often just part of the coins' descriptions, and some 'notes'. These notes are generally frequently recurring 'computer phrases', some of which puzzle, e.g.: 'Some found at Wanborough. Not yet authenticated via metallurgical analysis, the type appears genuine, however', or 'many in museums'.

The division of the coins into different varieties is mostly clear. Occasionally, distinct issues are lumped together, such as the Norfolk 'wolves' (British Ja and Jb), both catalogued under 610. More frequently, problems arise in the other direction, when a coinage has been sub-divided into many different varieties. An extreme instance is the 'potin' coinage, now in twenty-eight varieties, whose distinctions are not always obvious or easy to apply. Much the same could be said

of the Icenian silver coinage, where it is additionally confusing to have lumped the distinct ECEN and ECE coins into one general section. VA includes a number of new types which were not known to Mack, and sometimes he has been able to improve on Mack's descriptions, as the result of examining new specimens. There are, of course, still some mistakes and omissions. For example, the coins of Amminus have the inscription AMMINVS, not AMMINIVS. A closely related silver coin of Cunobelin is omitted; it is, indeed, very rare but was known to Seaby's *Coins of England* (no. 219B). Its inclusion would have reinforced the link between the coinages of the two rulers, and perhaps prompted us to look for a mint for Amminus at somewhere called DVN., or DVNO.. The quarter-staters accompanying the 'Chute-Cheriton Transitional' staters do not appear. There are other instances; and, indeed, in the few months since VA's book appeared several new types have been discovered. I cite these examples not to disparage VA's collection of material, but merely to illustrate how quickly our knowledge of Ancient British coinage is growing; even as a basic listing of material VA's book will rapidly need additions.

The book, then, provides an up-to-date description of the material, though it is unnecessarily bulky. But how good is the classification? How does this book advance our understanding of Ancient British coinage? Can we be sure of VA's attributions and dates?

To answer these questions we must look at some of the detailed classifications made by VA and the methods he uses. First, some methodological problems. A major criticism of the book is that VA does not give the evidence for many of his views. For example, his main method of classification is to use the weight and fineness of the coins (p. 56). He gives information about weights, but details of alloy are not given. A few analyses are listed on pp. 508-12, but more often no information is given or vague remarks such as 'very base metal' (p. 291) are offered. The evidence should have been given. Similar problems arise with another method used by VA, stylistic development. The difficulties are most obvious in his treatment of the inscribed or dynastic coinages. These are sometimes divided up, for example, into Verica's or Cunobelin's 'first coinage', 'second coinage' and so on. The reasons for such divisions are often not explained or arbitrary. VA may tell us why he has divided Verica's staters into three groups, but not why he has assigned the smaller gold and silver pieces to each coinage when they do not share the characteristics of the staters. As for Cunobelin, we are simply told that 'the sequence of the silver and bronze issues has been determined by style.' Of course, VA must be right in his view that these coinages should fall into different groups, but unless we have been offered some concrete explanation, there is no reason to accept his divisions as other than arbitrary. The same applies to the sequence he places them in.

VA uses stylistic or typological arguments in other unsatisfactory ways. For instance, we are told (p. 236)

that 'the first silver coins [of the Corieltauvi] carry an obverse type copied directly from the Roman Republican denarii of C. f. Hostidius Geta. The Roman prototypes are dated to about 60 BC, and thus the introduction of silver coinage . . . coincides with . . . 55 BC.' VA is not at home with Republican moneyers, whose names are regularly incorrectly given, as here (C Hosidius C f Geta: the unfortunate spelling 'Hostidius' recurs throughout the book). There are other objections. Is the Roman denarius really a prototype? This seems far from clear to me (here and elsewhere, the large areas of empty space in the catalogue could have usefully been filled with illustrations of the alleged prototypes); and even if it were, the conclusion would not follow, any more than it does in the case of Cunobelin's coins which copy much earlier Republican prototypes.

Other aspects of methodology are, to me, completely baffling. An example is the so-called coinage of Boudica, which 'has been identified via a statistical study of coin hoards deposited during the Iceni rebellion of 61 AD. The coins are the second most common type in the hoards and are virtually unworn. The average degree of wear is less than on the ECEN types, indicating that they are of later date. All published finds of single coins date after the rebellion, into Flavian times'. The use of the term 'statistical study' gives this passage a superficial plausibility, but the conclusion is hardly credible. It does not seem likely that the coins in question are much removed in date from the other similar Iceni pieces, and it is certainly very unlikely that they should be later than the pieces inscribed PRASTO, whose Romanised appearance and inscription suggest very strongly that they are the latest issues. Additionally, the relative wear of the Iceni coins in the mixed hoards of Roman and Iceni coins seems to suggest that it is as reasonable to think that Iceni silver coinage may have stopped with the invasion of 43. Moreover, the whole question of the sequence of Iceni coinage, and particularly the relationship of the gold to the silver, has been thrown open by the recent finds from Snettisham.

These general considerations indicate the sort of problems one encounters in this book, a lack of argument, an absence of evidence, conclusions presented with more enthusiasm than cogency. Moreover, the feeling that much of the classification is arbitrary is reinforced when one considers VA's general approach to chronology and attribution. Every coin is given a precise tribal attribution, and a precise date (usually to a period of as little as five years, sometimes even more precisely). Here I do not wish to discuss the detailed chronologies VA presents for individual issues or for his 'second coinages' of Verica or Cunobelin or so on, but to subsume these questions to the more general issue of the extent to which we can ever hope to date any Ancient British coins. For the early uninscribed issues, we must rely on hoard evidence and the dating of the continental (Gallo-Belgic) coins which are found in Britain. Much of this

is very uncertain, though there has recently been some helpful evidence from Whitchurch in Hampshire (see *BNJ* 58 (1989), 6–10). Yet it needs to be stressed that the dating of all these early coinages rests fundamentally on the broad acceptance of Scheers's attribution of Gallo-Belgic E to the period of Caesar's Gallic Wars. This attribution is indeed very plausible, but its basis is relatively fragile, and the uncertainty of the chronology must be accepted and stressed.

For the later coinages we have the names of the rulers some of which we (may) know from other sources, and which thus seem to give some sort of chronological structure to the period of Ancient British coinage. We know about Commius, who aided Caesar in 54 BC and who sometime subsequently fled to Britain. Three British rulers call themselves his son (*Commi f.*): Tincommius, Eppillus and Verica. Tincommius is usually identified with the British king Tim[] who is mentioned in Augustus's *Res Gestae* as having fled to his court as a suppliant. Verica has been, rather more plausibly, identified as the *Berikos*, who, according to Dio, fled to Claudius on the eve of the invasion of 43. But can this Commius, who had a son alive in AD 43, really be the same Commius who was active a hundred years earlier?! This seems very unlikely. There are two ways out of this difficulty. Either we can believe in two Commii, or we can suppose that 'son' does not mean what it says. But whichever alternative we choose means that we can have lost any overall chronological structure: if Tincommius and the others are the sons of another Commius, or not his sons at all, then we can have no very good idea when they reigned. The corollary of this argument is that one should avoid giving even regnal dates for the British rulers, and *a fortiori* specific dates for individual coin issues. This is especially so when they are as impossibly precise as VA sometimes gives (40–37 BC for his 1605, 57–55 BC for his 1215 or even 58–57 BC for his 1210!). These are meaningless. Even a commonly used date such as c. AD 10–40 for Cunobelin's reign should be avoided, in favour of some vaguer period, such as 'early first century AD'.

If our ignorance of the chronology of the period is impressive, the same is even more true of tribal units. A second fundamental problem with VA's book arises from the way he gives nearly every issue a tribal attribution. But our knowledge of such tribal entities and groupings is all late; even then we sometimes are not even sure of the names of the tribes. In the last ten years we have perhaps managed to learn to call the Coritani the Corieltauvi, and now we must remember to call the Cantii the Cantiaci (*Antiquaries Journal* 1988, p. 306).

But if we know so little of Britain at the very end of the Iron Age, what do we know about the people responsible for all the earlier British coinages, in the period of Caesar's invasions? Very little. This is why the traditional language of ancient British coin names have much to commend them, even though they are initially terribly confusing. The confusion is unfortunately compounded nowadays by the fact that there

are several languages, those of Evans, Allen and recently of Haselgrove. Each system has adopted a different way of referring to the coins, but they all have the merit of trying to be neutral about attribution. This is not just a bit of axe-grinding by archaeological theorists, but reflects a genuine difficulty. A hundred years ago Evans observed (pp. 130-1), 'The various divisions of Britain to which distinct coinage may be referred I have classified as "districts" [western, south-eastern, Kentish, Central, Eastern and Yorkshire]. A classification of the coins under the names of the British tribes mentioned in history, would . . . have been more satisfactory. Unfortunately, however, it is now almost, if not quite impossible to ascertain the extent and position of the territory of the different tribes at the time these coins were struck . . . there was probably a considerable alteration in the territorial division of the country under the different reguli [from Caesar to Claudius]. In fact there are some tribes mentioned by Caesar, such as the Ancalites and the Bibroci, who are not enumerated among those who occupied territory in Britain in the time of Ptolemy.' And so on. What Evans said was repeated by Allen (in *Problems of the Iron Age in Southern Britain*, edited by S. S. Frere, p. 125), 'it is, I suggest, misleading to project backwards the static tribal divisions of Roman Britain'.

Indeed we have little knowledge about Britain in Caesar's days, and what we do have is perhaps rather unexpected. He talks of a king called Cassivellaunus; he doesn't give him any tribal affiliation, though he does perhaps imply his tribe lay north of the Thames, and that it was distinct from the Trinovantes, whose leader Mandubracius had appealed to Caesar for protection against Cassivellaunus. We hear incidentally of tribes called the Cenimagni, Segontiaci, Ancalites, Bibroces and Cassi, but we only hear of them because they happened to submit to Caesar. Elsewhere we hear of four kings in Kent, the splendidly named Cingetorix, Carvilius, Taximagulus and Segovax. But we can hardly begin to relate these to tribes known later, let alone associate them with any particular coinages.

Thus if we are correct in dating the early native coinages to Caesar's period, we have to face up to the realisation that it would be quite wrong to give them tribal attributions. Not just that, but we do not even know if each distinct coin type reflects in any way any sort of political grouping: we may suspect that British D (VA 1215) represents some kinglet in Cheriton or we might want to think that British A (VA 200) represents Cassivellaunus, but they might not. One only has to look for instance at the coinage of the Roman world to see how a single political unit might embrace a large diversity of superficially incompatible coinage systems; conversely, the attempt to plot political boundaries on the basis of coin provenances is notoriously unreliable (did the English kings rule Norway?). In the case of VA's book the *reductio ad absurdum* of his tribal attributions can be seen in his description of the new Snettisham finds (pp. 548-9),

These coins, many of previously unknown type, were clearly small issues all made locally in Norfolk, yet, for VA, they are coins of the Iceni, of the Atrebatas and of the Trinovantes.

Thus, as a chronological and tribal reconstruction of Ancient British coinage, this book seems to me to have serious misconceptions, which only add to the difficulties caused by its methodological problems. For such reasons, the historical 'reconstruction' of pre-Roman Britain given in the introduction will hardly attract serious attention. This is a shame, since the study of coinage will be discredited in archaeological and historical circles for a long time. Coinage can contribute to our understanding of pre-Roman Britain, but only when the limitations of the material are more generally recognised. The main obstacle to this seems to me to be the difficulty of accepting the wide degree of uncertainty implicit in any attribution, any chronology or any interpretation, and this uncertainty should be stressed, especially in standard reference works. Despite all the progress that has been made, notably by Evans and Allen, we should still acknowledge, as Camden wrote four hundred years ago, that to talk of ancient British coins is 'to walke in a mirke and mistie night of ignorance'.

ANDREW BURNETT

Coinage in Tenth-Century England from Edward the Elder to Edgar's Reform. By C. E. BLUNT, B. H. L. H. STEWART and C. S. S. LYON. Published for the British Academy by the Oxford University Press 1989. xxxiii + (1) + 372pp., 27 plates.

BLUNT, Stewart and Lyon's *Coinage in Tenth-Century England* brings to fruition a campaign of research commenced as such by Christopher Blunt in the mid 1960s but founded on the unrivalled card index of surviving coins of the period which he first began to assemble around 1950. *CTCE* is thus in a real sense the culmination of one very definite phase in the history of the study of the Anglo-Saxon coinage, and it is very appropriate that Blunt's name should be joined on its title leaf by those of Ian Stewart and Stewart Lyon who have played so major a role alongside him in unravelling the problems presented by the coinages of ninth and tenth century England.

It will be evident merely from the names of the authors that *CTCE*, which is the first considered account as a whole of the coinages struck in England from the accession of Edward the Elder in 899 to the recoinage carried out under Edgar in the early 970s, is, and will remain, indispensable to any serious student of the subject, and it will be apparent from what follows here that it provides the clearest account yet of the types, geographical pattern and dating of the coinages of the period.

It is however important to note at the outset that the authors intend that it should be used in active conjunction both with Blunt and Marion Archibald's recent

SCBI volume, *British Museum, Anglo-Saxon Coins V, Athelstan to the Reform of Eadgar 924-c.973*, published in 1986, and with Blunt's earlier full-length study of the coinage of Æthelstan, published in 1974 as the major ingredient of vol. 42 of the *British Numismatic Journal*, and a reviewer therefore has the pleasant but unusual task of urging those interested to procure the volumes of 1974 and 1986 as well as that currently under review.

The relationship between *CTCE* and its two precursors is indeed central to any considered assessment of it by a reviewer, for the authors' decision to cast their book in a form in which it would complement, rather than supplant, the previously published volumes, has had a marked impact on the shape of the volume's text, in which the extensive coinage of Æthelstan is only summarised, and on the selection of coins for illustration on the volume's plates, where the aim has been to select coins of Æthelstan and subsequent kings that have not previously been illustrated by Blunt in *BNJ* 42 or by Blunt and Archibald in their *SCBI* volume. In this and other respects the volume is very characteristic of Blunt's brand of numismatic writing, in which current research built on previous research without unnecessary repetition so that the reader could be provided as economically as possible with every material piece of information on which Blunt's own reasoning and conclusions had been based.

The volume runs in all to nineteen numbered chapters occupying 312 pages of text, together with 34 pages of preliminary material and a two-page appendix at the end reporting a newly discovered Bust Crowned coin of Eadwig. Two opening and five concluding chapters flank a core of text which deals in succession with the coinages of Edward the Elder and Archbishop Plegmund (pp. 20-96), the Anglo-Viking coinage of the early tenth century (pp. 97-107), and, briefly, with the coinage of Æthelstan (pp. 108-13). Then, after an introductory note (pp. 114-6), the volume continues with a discussion of the coinages of Æthelstan's four successors in chapters dealing with their Horizontal types (pp. 117-70), Circumscription types (pp. 171-190), Bust Crowned types (pp. 191-201), and other types and contemporary irregular striking (pp. 202-210), rounding off with an appraisal of the Viking coinage of 939 to 954 (pp. 211-34). This presentation of the material, under which the coinage of 899-939 is discussed primarily by reign, and the coinage of 939-c.973 primarily by type, reflects the fact that after 939, while king followed king in relatively rapid succession, principal national and regional coin types carried through from one reign to the next, making it easier to plot the history and the structure of the coinage over these thirty-five years by reference to them rather than to the names of the rulers that appear on the coins' obverses. Such an arrangement for the later period is also fully consonant with the authors' primary purpose of providing an overall classification by which coins of the same type struck in different reigns can be described in a uniform manner, and the system of classification that they have devised

will rank as one of their most enduring contributions to British numismatics (its worth has already been demonstrated in the *SCBI* volume of 1986).

The history of the coinage of Anglo-Saxon England between the introduction of a reformed penny coinage under Alfred in the late 870s and the full-blooded reform carried out under his great-grandson Eadgar in the early 970s is one of transition from a coinage struck at a handful of major towns in the south and south-east of the country to a coinage struck at a network of towns and boroughs extending widely over English-ruled territory south of the Humber. In Northumbria, where Scandinavian settlers and their descendants resisted administrative and cultural absorption from the south, coin production remained centralised at the capital city of York, and York coin types remained until 927 independent of those found elsewhere, but from 927 onwards the products of York moneyers increasingly interlock with those of moneyers in the rest of England, even during periods when Northumbria had independent Viking rulers, and after 954 the coinage struck at York is no more distinctively regional than that struck by moneyers in the East Midlands, East Anglia or North-Western Mercia.

As Stewart Lyon demonstrates here in his lengthy and splendidly lucid account of the coinages of Edward the Elder and Archbishop Plegmund, the real moment of transition from a coinage produced at a few major towns to a coinage of which a good proportion was struck by moneyers working at a more local level occurred shortly after c.915, when the number of moneyers working south of the Thames becomes such that it may be presumed that the borough-based framework for coin production evidenced a few years later by Æthelstan's Grateley laws was then first put into place. It was also after c.915 that a coinage in Edward the Elder's name was first struck by moneyers working in the newly reconquered Eastern Danelaw.

A reviewer can scarcely do more than glance at the wealth of material and issues with which the reader of *CTCE* is confronted, but it may be helpful to direct attention first to some of the detail of Lyon's chapter on Edward the Elder and after that to the geographical pattern of the coinage as a whole.

The beginnings of Edward the Elder's coinage are clearly evidenced by the 54 identified coins of the reign present in the famous Cuerdale hoard of 1840, of which the deposit is now dated by Lyon to c.905, and by a group of five coins die-linking with those from Cuerdale which belong to that part of the 1958 Morley St Peter hoard which can be seen to have been put together c.903. These reveal that minting in southern and south-eastern England in the first years of the reign was controlled from Winchester, where the dies for the coins were engraved and where the majority of the moneyers then active were based, and, surprisingly, that there was no significant die-engraving at, or coin production from, the older minting towns of Canterbury and London for nearly five years into the reign. Elsewhere in Anglo-Saxon controlled territory there was at this stage only a coinage by five moneyers

in West Mercia who had previously worked there in Alfred's reign: Lyon shows that there is good reason to believe that both this coinage and the more ambitious West Mercian coinage, with 'exceptional reverse types' that followed it in the period up to the death of Æthelæd, Lady of the Mercians, in 918, were coinages predominantly produced by moneyers working at Chester and Shrewsbury rather than at more southerly towns in the West Midlands, and historians must weigh the significance of this for the political and economic history of Mercia both in Edward's reign and in the last years of Alfred's reign. Lyon's concurrent demonstration that the series of coins with 'exceptional reverse types' – the reverses portraying such varied objects as a church tower, a city gate, a flower, a bird and the Hand of God – were solely struck in West Mercia is in itself striking new evidence for the individuality of the region while Æthelæd lived.

In the period between 905 and 915 the pattern of coinage in southern England saw some alteration, Canterbury joining Winchester as a centre for die-engraving, and both Canterbury and London re-emerging as mints, while there is also evidence for coin production on a smaller scale at Oxford, Southampton and perhaps two or three other as yet unidentifiable towns in the south and south-east. It was not however until after c.915 that a substantial expansion of minting is noticeable, Lyon being able to identify some 67 moneyers working in southern England between then and Edward's death, whereas no more than 25 can be identified as working in the same part of England over the whole of the period 899–915. Lyon is also able to point to greatly increased coining activity at London, where the moneyers become more numerous and produce coins of a Bust Diademed type scarcely known from other southern mints, and it can now be seen that the prominent role occupied by London in the organisational structure for minting specified in Æthelstan's Grateley laws – London is there assigned eight moneyers – was not just a formal recognition of London's historic position as a centre for coin production but was a direct reflection of London's post-915 coinage output.

In the rest of Edward's kingdom the coinage of the final years of the reign is nearly all of the non-portrait Horizontal type (the type that numismatists have previously called Two Line type), except for a local East Anglian coinage which in copying both the type and the inscriptions of the London Bust Diademed series is further testimony to London's impact on the monetary scene at this date, but which also serves to show, taken together with two identifiably East Midland groupings of coins of Horizontal type, that the needs of coin users in the reconquered Danelaw were not directly met from London but were met in large part by local minting operations. The evidence for these is patchy, but Edward's new Danelaw moneyers seem to have included individuals who had previously struck coins of St Eadmund type for Viking chieftains and it may well be that Edward simply inherited

existing arrangements for coin manufacture at such places as Norwich, Northampton and Stamford. If the moneyers concerned were already in place when required to coin in Edward's name and in Edward's types, rather than being new men owing their positions to Edward, one can go on to conjecture that they retained a certain independence that enabled them to operate in this and subsequent reigns without having to make the changes in the type of the coins prescribed for moneyers further to the south.

Lyon's account of the coinage of Edward the Elder and Ian Stewart's business-like summary of the contemporary coinages struck in Northumbria and Lindsey carry the reader a little past the actual date of Æthelstan's accession, for Lyon's progress with the coinage of Edward the Elder enables him to offer some useful guidance on the interpretation of the coinage of Horizontal type struck for Æthelstan in Southern England and the West Midlands up to c.927.

From that point onwards the numismatic terrain is more familiar, and *CTCE*'s role is as the latest and most authoritative addition to a literature which includes, as well as the publications of 1974 and 1986 to which it is related, Kenneth Jonsson's recent *The New Era, the Reformation of the late Anglo-Saxon Coinage*, (Stockholm and London, 1987). It is pertinent to cite Jonsson's book here not simply because readers need to be alerted that despite its title it has a great deal to say about the coinage of Eadgar's reign before Eadgar's reform, but also because its discussion of the coinage of that period is set out under geographical sub-headings which enable the student to see easily what the evidence is for coin production at that point in a region such as the South-East Midlands.

For *CTCE*, with its wider canvass and with the priority given by its authors to classification by type, so explicitly geographical a presentation of the coin evidence can scarcely have been feasible, but the author's approach does mean that the reader of *CTCE* must have all his wits about him when confronted, as on pp. 161–2, with a stretch of text under the successive headings *HTI Uncertain location, including Midlands*, and *HCI and HTI*, which is the place where Blunt records the remarkable fact that among the very numerous surviving coins of Eadgar of Horizontal type there are scarcely any attributable to mints in southern England (a fact made the more remarkable because there is sufficient evidence to show that coins of this type were struck in the region at this time, and thus that their rarity is not due to the fact that Horizontal coins of Eadgar from southern mints should not exist).

Coins of Horizontal type struck at southern mints after 939 need indeed consistent alertness on the reader's part, for although there is only the most minimal mention of them in *CTCE*'s narrative text, accompanying summary lists of surviving specimens show that such coins formed a very major element in English currency in the 940s, 950s and perhaps 960s. Nor, for that matter, is it particularly helpful to an overall understanding of the coinage that the network

of southern English mints revealed by mint-signed coins of Æthelstan is not made clear to the reader of the present volume until the reader comes to a table of 'named mints by reigns' on pp. 256-7, and it is necessary even then to do some further research to discover which mints are recorded in Æthelstan's Circumscription type and which are recorded in his Bust Crowned type.

Such remarks should however be taken, as they are offered, as guidance for the reader rather than as criticism of the authors, for what may appear imbalance in their treatment of the coinage of different parts of the country only arises because of the substantial progress that they have made with the issues of such mints as Chester, Derby and York. It is also now possible to see, with a clarity that would have astonished Blunt himself when he first tackled the series, that the pattern of coin production in the middle years of the century is actually quite simple, in the sense that the coinage struck in most parts of England has its own definite character and coherence, and that those places for which the surviving coin evidence is more complicated, e.g. Derby, owe this to their position on political and monetary frontiers.

Thus, moneyers working at towns or boroughs on or south of a line drawn from London to Gloucester, having struck coins successively of Circumscription Cross type and Bust Crowned type for Æthelstan, reverted in 939 to striking coins of Horizontal type and struck it continuously through the reigns of Eadmund, Eadred and Eadwig into the early years of the reign of Eadgar. The only breaks in this pattern occur in Eadwig's reign, and these, a strictly localised coinage of Circumscription Cross type from mints in the extreme south-west and a coinage of Bust Crowned type represented by a single surviving coin by a London moneyer, do not detract from the overwhelmingly uniform character of the coinage of the region.

Similarly, moneyers at Norwich, for much of the time the only operating mint in East Anglia proper, began to strike coins of Bust Crowned type under Æthelstan, and seem to have struck coins only of this type right down to c.973 (see table 7 on p. 192).

Their neighbours in the Danish shires of the East Midlands display comparable consistency in striking coins of Horizontal type only from Edward the Elder's reign to a point in Eadred's reign when, after a brief phase in which they may all have struck coins of Bust Crowned type akin to those of Norwich, they divide into a predominantly Lincoln group of moneyers who strike coins of Horizontal type only down to c.973, and a more southerly group of moneyers who in Eadgar's reign strike a Circumscription Cross type and a Bust Crowned type; and here the division, when it occurs, must reflect not a mere hiccup in monetary administration but changing political reality, such towns as Bedford, Huntingdon and Northampton no longer having real links with the areas of heavier Danish settlement further north.

On the other side of the country, the coinage has no

less clear a character, the issues of moneyers working at Chester and at smaller places in the West Midlands as far south as Hereford and Warwick being consistently distinguished by the use of rosettes of pellets as central features or as ornaments. In this area coins of Circumscription types struck in Æthelstan's reign gave way on Eadmund's accession to a coinage of Horizontal type, and, as in southern England, this held the field until early in Eadgar's reign when it was temporarily superseded by Circumscription types. The West Midlands Horizontal Rosette type runs to more sub-varieties than the similar type without rosettes struck in southern and eastern England, but these varieties are not impossibly complicated, and the classificatory system adopted in *CTCE*, taken together with the authors' comments on individual coins or clusters of coins, enables the reader to appreciate the nature of such varieties and the essential family relationship of the issues of West Midland mints.

There is certainly much about tenth century coinage that has still to be discovered or properly understood, and it is unrealistic to suppose that the pre-973 issues of individual mints or moneyers will ever fall into as neat a pattern as that imposed by Eadgar's reform on mints and moneyers operating after c.973. Yet, as *CTCE* triumphantly demonstrates, the coinage of the period has an underlying structure plain for all to see once properly explained as here by Blunt, Stewart and Lyon. No such full explanation of this coinage has been attempted in the thousand years of human history that have elapsed since Eadgar's death, and not just numismatists but all those interested in the history of England in the Anglo-Saxon period owe the three joint authors of *CTCE* a great debt of gratitude.

H. E. PAGAN

Sylloge of Coins of the British Isles 39, The J. J. North Collection. Edwardian English Silver Coins 1279-1351, with some supplementary examples. By J. J. NORTH. London 1989. Published for the British Academy by OUP and Spink and Son Ltd. viii + 278pp, 46 plates.

THIS is an extremely handsome volume which all Edward penny specialists will have to have. The plates are excellent, and the text, as far as I can see, faultless. This is very much 'the state of the art' of Edwardian numismatics. It embodies the very latest detailed research by the leading exponents in the field, presented in an exemplary manner. Groats, halfpennies and farthings are also covered. The volume is clearly a monument to a life-time's collection and study, but it is also the fruit of a century's collective work in the best British numismatic tradition.

It is thus fitting that the introduction should contain additional essays by Stewart, Wood, and Woodhead, for many years leading researchers in this field. Woodhead's study of the early coinage of Edward III is particularly accomplished, successfully marrying coins and documentary evidence in a pleasing synthe-

sis. Indeed, if North is to be criticised it could perhaps be on the grounds that the documentary evidence, especially the mint accounts, could have been usefully pressed into service more often. North tells us that the chronology of class 10 is based on proportions of coins and known output but he does not show us his working at this point. Moreover, some at least of the missing figures for 1310 and 1311 have been found by Brand. Other documentary evidence, well known to the Foxes, is often the foundation of the dating suggested for certain classes, but this evidence, though clearly known and used, is not set out. To my mind, the dating of classes (only appearing in small print in the body of the catalogue), and the evidence on which it is based, could both have been given a higher profile.

The establishment of a chronology for the coinage of the first three Edwards has been a major achievement of which British numismatics may feel justly proud. It has been achieved by a combination of detailed numismatic work of the most minute kind on the coins themselves, combined with an analysis of the hoard record, and a rigorous search of the documentary sources. As a result, the numismatist's understanding of this coinage is now so accurate that he is in a strong position to contribute his knowledge to the wider fields of medieval archaeology and history. However, the application of numismatics to history is not within the remit of this volume, and it would be wrong to criticize the work for not being something it never attempted to be. This is numismatics pure, but not particularly simple.

The detail with which this large coinage has been studied is at times breath-taking. Where there was once IIIg and IVa, there is now 3g1-3 and 4a1-4. There are now over twenty sub-groups within class 10. To play devil's advocate, it could perhaps be argued that analysis and classification on this scale serves little purpose, and may do harm if it deters a wider public from exploring this coinage. However, if the purpose of classification is to identify differing types with a view to understanding their sequence in order to establish their chronology, then the refinement of that classification can only strengthen the chronological framework. Thus to assert that Y follows X is not as good as to demonstrate the succession of punches through a range of sub-types from earliest X to latest Y. Detailed classification of an undated series does therefore unquestionably serve a purpose. Even so, it may still perhaps deter students looking for a wider application for their studies.

The answer to this problem could be that although detailed work of this kind strengthens numismatic analysis, it is not necessarily required of all students that they should choose to operate on this level. The non-numismatist museum curator would do quite well enough if he identified his local stray-finds according to old-style Fox. The historian of money supply needs only to satisfy himself that the chronological sequence can be objectively demonstrated, without necessarily being able to do so himself. The general English collector need surely lose no sleep if he is unable to

find a 10ab6: after all less than one per cent of all class 10 fall into this particular pigeon-hole. Even the specialist may sometimes find it difficult to master the finer points of, say, 10cf3(a3).

Thus while hailing the achievement which this volume represents, it seems to me that there may be a case for some numismatists to continue to opt for the more general Fox system, rather than be frightened away from the whole subject by the complexity of the classification. In this connection the use of Arabic numerals in the North classification is particularly helpful. By choosing Arabic (North) or Roman (Fox) numerals any author could signal the level of detail to which his classification aspires. Just as North has legitimately chosen not to set this coinage in its historical and economic context, other students might prefer to leave the finer points of classification in the hands of the specialists. And for accuracy, reliability, sound judgement, and sheer organisational power and thoroughness, there can be few specialists to rival North. Moreover, for those who do wish to use the latest, most detailed classification, this volume will be of the greatest value, as it provides an authoritative statement of current thought, much of it hitherto unpublished. My own recent work on two large new hoards from Aberdeen would have been greatly helped if this *Sylloge* had been to hand.

In short, this is a detailed numismatic study of the highest quality. It is not really a book for the beginner, despite the pointers for classification helpfully supplied, and the mass of comparative illustrations. The beginner would do well to get hold of a copy of North's old 1964 pamphlet, with its useful enlarged photos, only graduating to the *Sylloge* when he feels at home with the pamphlet. Nor, it must be admitted, is this a book for the historian. However, what it does do is to establish the detailed chronology of the English coinage from 1279 to 1351, and as such is a rock on which further monetary contributions which are of interest to historians, can be built. It is unquestionably a major contribution to English numismatics.

N. J. MAYHEW

Currency and the Economy in Tudor and early Stuart England. By C. E. CHALLIS. The Historical Association, New Appreciations in History, 4 (London, 1989), 32pp., illust.

In this short but wide-ranging essay, Christopher Challis brings to bear the wisdom distilled from his study of the Tudor and early Stuart currencies over the past quarter of a century: he has laboured long and hard in this specialised field and has advanced substantially our knowledge of this most baffling of subjects. But this is not an introduction suitable for the beginner, although the format of the booklet indicates otherwise. It is a detailed and sophisticated discussion of changes in the currency and in the economy in general, and suggests new and exciting ways of looking at the process of economic development.

At the heart of the analysis is a discussion of variations in the level of mint output, which was attributable mostly to government actions, and an attempt to estimate the levels of currency in circulation at different points in time. He estimates the circulating medium at £1.67 million in 1526 which, assuming that the stock of currency at any point in time was the product of the output of the previous thirty years, approximately doubled by the end of the century, and had risen again four-fold by 1649. This occurred at a time of substantial population growth and urbanisation, rising commodity prices and more moderately rising wage rates, and the spread of wage labour: hence, the eight-fold overall increase in the size of the circulating medium was 'broadly in line with what one might have expected, if the early Stuart economy was to have been as well stored with minted coin as had that of a century or so earlier'.

But the increase in the money supply was not the only lubricant in this story of economic expansion. There may have been a rise in the velocity of circulation, and the period was also marked by a significant increase in the production and use of tokens. Moreover, while many transactions were underpinned by the widespread availability of petty credit, others came into the category of 'offsetting, barter, and payment in kind'. The existence of such practices makes it impossible to determine the proportion of transactions in which cash changed hands, sooner or later, and renders increasingly difficult, discussion of the causes of the rather modest inflation of the period (dubbed 'The Price Revolution' by historians in the late nineteenth century). Thus, the only disappointment I felt on reading Christopher Challis's stimulating essay was that he had insufficient space to elaborate on this theme: it is to be hoped that he will produce the full-length study of the relationship between the economy of Tudor and early Stuart England and the money supply for which he is so eminently qualified.

DONALD WOODWARD

Royal Sovereign 1489-1989. Edited by G. P. DYER. The Royal Mint 1989; 99pp + numerous illustrations in text, ISBN 1 869917 03 0.

THE five hundredth anniversary of the first English coinage of sovereigns of twenty shillings has been celebrated by the Royal Mint in two ways: by the coining of a set of four commemorative gold coins (five pounds to half sovereign); and by the publication of this book. Various aspects of the sovereign, historical, typological and technical, are discussed in five essays by different authors, and the work as a whole presents an authoritative and readable treatment of the subject.

The first of these essays, entitled 'A fifteenth-century revival' – surely it should have been called 'A twentieth-century revival' – is by John Porteous, here

wearing the hat of a member of the Royal Mint Advisory Committee on ... Design etc. For the most part it summarises what may be read in greater detail later in the book, but it does include an interesting account of the Advisory Committee at work, reminding us of the legal and constitutional pitfalls that lie in wait, let alone the technical problems. Interesting anecdotes illustrate the way in which Pistrucci's St George and the Dragon almost achieved the status of a national emblem, and Porteous finally poses the problem as to whether in the age of one-ounce bullion 'coins' the sovereign can survive as anything more than a pseudo-coin for specialised, indeed blinkered collectors.

'The early story', by the Society's President Christopher Challis, is a characteristically detailed and well documented account of the sovereign of Tudor and early Stuart times. Quotation from contemporary sources, both literary and archival, shows a comprehensive grasp of the intricacies of economics and politics that provided a context for the new coin. The curious verbal habit of referring to the half-sovereign as a 'sovereign' seems to stem from the enthroned monarch type of the numerically dominant base half-sovereign of Henry VIII, and is illustrated from a variety of later sixteenth century sources. Perhaps the most interesting is the memorandum attached to a will proved in February 1600, which lists ryls, 'old' and 'new', 'old' angels, English and French crowns; 'new' ryls were equated with sovereigns, and valued at ten shillings. Continental valuation books for merchants adopt the same usage.

The expression 'sovereign' died out during the first quarter of the seventeenth century, and, as Graham Dyer points out in 'The modern sovereign' the name was revived for the new coinage of 1817 under antiquarian influence. Pure mediaevalisms unrelated to the reality of coinage, such as 'bezant' (=2s), 'noble' (=6s 8d) and 'angel' (=10s), were more or less extinct by 1700. However, reckoning by pounds of twenty shillings remained customary, and this amply documented usage was reflected in the denominations of eighteenth century bank-notes as well as contemporary literature. Public opinion eventually compelled the replacement of the 21s guinea by the 20s sovereign, and although it took several years before the new coinage came into general circulation, the sovereign, once established, became deeply engrained on the popular mind. The influence of fashionable neo-classicism kept St George heroically naked, but no amount of subsequent artistic ridicule has been able to detract from the appeal of this noble and vigorous image. Recoinages in the mid 1840s and early 1890s maintained the sovereign's integrity. In view of the import of gold coin from Portugal in the eighteenth century, it is interesting to observe that in the nineteenth century, sovereigns were widely current in Portugal and Brazil. Dyer makes the significant observation that as early as 1884 the move to replace gold coin by notes or tokens was already under way. The effective abandonment of a gold currency is shown to

have been an outcome of the First World War and subsequent economic problems.

After the Second World War, the sovereign experienced a revival as a trade currency, but has now been superseded by the various gold bullion 'coins'; it seems unlikely that Dyer's hope of a further revival outside the circle of collectors will be realised.

John Sharples discusses the production of sovereigns overseas succinctly and clearly. Mints in Australia, Canada and South Africa opened in order to convert locally-mined gold into sovereigns. A short-lived Bombay mint existed only to satisfy a brief localised demand. The Canadian minting of gold was small, but Australia in particular became an important supplier of coin, and supported three mints. A curious survival of earlier practices is noted for India – the existence of a small premium in favour of 'shield' sovereigns over those with St George, a predilection perhaps deriving from trade with China, where the concept of defeated dragons had unacceptable political overtones.

Vincent Newman had many years of experience in the testing of coins, and no-one is better qualified than he to explain the development of theory and practice in the production of a standard gold coin. He discusses the problems created by the need to have an accurate trial-plate, and reveals that not until 1851/2 did sovereigns actually achieve the standard laid down for them. Newman writes with a refreshing and justified enthusiasm for the process of on-going improvement in accuracy of weight and fineness that has continued down to the present day.

This book is far more than a nostalgic souvenir. It will be read and re-read with interest and profit, particularly its later sections, as an authoritative account of the working of a great public service and of the practicalities hedging the coining of precious metal in all ages. It is written with affection, too.

Truly our Royal Mint is something of which we may be proud.

J. P. C. KENT

A Dictionary of Makers of British Metallic Tickets, Checks, Medals, Tallies and Counters, 1788-1910. By R. N. P. HAWKINS. Edited by Edward Baldwin. London, A. H. Baldwin & Sons, 1989. [7]. xiii, 1003pp., 32 pls.

THE author of this major contribution to the literature of numismatics is remembered with affection by many, as his obituary in *BNJ* 57 testifies. They will appreciate the portrait frontispiece to his *magnum opus*; but here it must be assessed as a work of reference.

The title and introduction indicate its contents precisely as makers identified from their signed checks. Other medallists who could be found in directories, and makers of checks which presumably had not come to the author's notice (such as Kirkwood of Edinburgh), do not find a place in this volume. Many of those included, however, were producers of

coins, medals and tokens in general, so that the volume is an important complement to Forrer's eight-volume *Biographical Dictionary of Medallists*. Oddly, though, the title in one respect is wrong: it is the makers who are British, and not their products necessarily. Indeed, it appears from *SCMB* (1966), p. 194, that the author did intend his title to be 'Dictionary of British makers. . .'

The title is also imprecise in suggesting one dictionary. There are actually five: Makers 1788-1820, Birmingham makers (four hundred pages!). Provincial makers, London makers, and what the author calls Fringe firms. This division does have some advantage over a single alphabetical sequence, including a helpful introduction to each part, and for Part III an index which is the best means to find makers in any provincial town; but it is highly regrettable that the individual part (and the individual appendix) is not identified in the running heads to the pages. Occasional users will constantly have to rediscover this. Their key to rapid consultation of the volume is pages 969-76, 'Overall index of names of makers &c.' (which is not an index to Part V only, as stated in the Contents). Even this omits some firms mentioned, among them BULLOCK, Part I, page 5; CROWNE, GIMBLETT, and HANCOCK, i.41; HOBSON, i.58; IMPERIAL METAL INDUSTRIES and KINGS NORTON METAL COMPANY, ii.369; PICKEN, ii.350; I.S.G., i.104-5. Other firms not certainly relevant are instead in the index of subject matter, which might well have been fuller, particularly for pieces transcribed from the records of companies which did not usually sign such work (pp. 278-84, 370-6).

The authority behind this volume is the author's careful research into the post-1820 makers extending over more than a quarter-century, published in *SCMB* with supplements, and subsequently updated. There remains the occasional slip, but in general the accuracy is of a high order. It is sad that Roy Hawkins allowed his pursuit of this to result in a constipated mode of expression, with persistent interpolations and footnotes, awkward adverbs, and words slightly misused. This reviewer frequently felt that he needed a copy of Gowers's *Plain Words* – or an editor: and Edward Baldwin as editor has reduced the text to the state of being at least comprehensible. What a relief to have foreign languages spelled correctly!

It is extraordinary that such a stickler for accuracy as Roy Hawkins should have habitually converted into lower case all legends which occur in capitals (see p. iii). Not only is exact transcription needed to distinguish certain dies, not only would it have saved the space taken up with comment on the readings, but the author's practice is actually wrong when capital V becomes lower-case v, as in the ghastly 'Georgivs'. Also, there should have been a mention of Mr Hawkins's dubious practice of dating makers from directories by deducting one year from the titular dates of those directories, at least for Birmingham and London (provincial firms published in *SCMB* before he announced this in 1968 are, however, given the

same dates in the volume). There is no explanation either of his peculiar habit of putting in brackets dates tried in vain, e.g. '(1808-)11-44' to mean that while the maker is listed from 1811 to 1844 he does not appear in the 1808 [i.e. 1809] directory.

Part I, covering Birmingham and London makers from 1788 to 1820, is new, and how welcome are the documented accounts of such as James, Kempson, Kettle, Kirk, Lutwyche, Phillp, Powell, Skidmore, and Thomas Wyon. (For Thomas Williams Mr Hawkins needed to make the acquaintance of J. R. Harris, *The Copper King*, 1964.) How interesting that T. I. Wells, fl. 1811-21, may be identical with T. W. Ingram, fl. 1822-44. Many of the names in Parts II to IV are familiar, but so much more accessible than dispersed over seventeen years of *SCMB*; and the extent of the revision may be judged from the 44 pages on Heaton and the Birmingham Mint, the 46 pages on W. J. Taylor, Boulton and the Soho mint are omitted on the grounds that they would fill a whole volume; *Fattorini* is available as a separate monograph of [5] plus xiv pages. Students of other fields should not overlook the accounts to be found here of Spink & Son, and in Part V of J. Henry, Hyams, Maudslay, and of Henry and Matthew Young.

In one of the fifteen appendices is at last published an abstract of Dr Kent's 1957 paper on medley halfpence or evasions, in researching which Roy Hawkins assisted, and to which he adds both an introduction and notes on the names appearing on the pieces. In other appendices is the account (elusive in *SCMB*) of the charlatan C. O. Groom Napier, 'Prince of Mantua and Montferrat', and a police report on To Hanover 'Sovereigns'. The bibliography is extensive but poorly arranged, and difficult to consult for works cited in the text by an abbreviation. In fact one looks in vain for 'L&S', which stands for H. W. A. Linecar and A. G. Stone, *English Proof and Pattern Crown-size Pieces* (1968).

The plates are sometimes rather dark, but welcome nonetheless. They are representative of the makers' work, except that pls 7-13, their key, and appendices 3-4 give detailed coverage of Queen Victoria and other linked dies. These will merit close study, and point up the fact that many of the investigations published here are based on readings, so that there is more die-study which could be undertaken. Whatever led the author to suggest (p. 316) that pl. 17, figs. 12 and 13 are from the same portrait punch? Enlargements intended for plate 16 have been omitted. On pl. 30, figs. 8 and 9 have been transposed, and the caption to the last item has to be supplied from p. 803. How pleasant to find portraits of four makers on pls 31-2.

In addition to the makers, many of the issuers and subjects of items mentioned have been researched, and the range of precise information in this volume is quite astonishing. Here are corrections to earlier accounts of the Heaton and Watt mints, to Bell's unquestioning identification of Battlebridge, to Elvin's *Handbook of Mottos* (p. 242). Even where results are negative, as with Southey's practical system of book-keeping, Mr Hawkins's conclusions are worth having. Now that his work can be seen as a whole, the trees coalesce into a wood which is hardly less than the business biography of the brummagem industry, an industry which in the nineteenth century belied the enormous condescension of posterity and became an exporter to the world. Here are contributions to the monetary and commercial operations of North, Central and South America, Africa, Australasia, and the Far East, Egypt, Turkey, and the Balkans, Italy, Portugal, and France. Mr Hawkins has posthumously provided the essential structure of this industry.

R. H. THOMPSON

OBITUARY

HERBERT SCHNEIDER

HERBERT Schneider, who died in January 1989, was a universally acclaimed expert on the subject of English gold coins ranging from Henry III to date. He was born in Brunswick to parents of British nationality and moved to Zurich when he was sixteen where he completed his education. As a linguist he spoke fluent English, French and German to which he later added Flemish. He also had some knowledge of Spanish and Italian and maintained a remarkable knowledge of Latin.

His career took him to Antwerp, where he joined the family firm which had trading and petrochemical interests in Belgium and elsewhere. He soon took charge of the financial affairs of the group where he remained for his working life.

As a very young man he became interested in English gold coins and over the years he built up an extremely important collection, starting first with the hammered series and then extending to the milled gold coins. With his background he was always interested in Flemish gold coins which he also collected, although his main activity lay with the English series.

During the war, Herbert was actively engaged in the British Army, in the Secret Service and operations of the S.O.E. It was not until 1947 that he was able once more to turn his attention to numismatics. At about this time the gradual dispersal of the old famous collections began, and he was fortunate to be able to add very considerably to his own from Raynes, Ryan, Lingford, Carter, Lockett and others. He also purchased many coins from the collections of Capt. Vivian Hewitt and Gordon le Mare. The latter, in particular, gave him the opportunity to expand his milled coins to include all the coins with symbols such as Elephant and Castle, VIGO, LIMA, and EIC which he had not previously collected. His milled collection reached a point of total completion as far as all varieties of coins struck for circulation was concerned: he did not generally include patterns and proofs.

In the hammered series Herbert Schneider extended his interest to include die varieties in certain areas, and in this respect he was particularly strong in the Restoration coinage of Henry VI, the Flemish imitation nobles of Edward IV, and the hammered coinage of Charles II. He made a special study of the coins of Charles I and his best known numismatic paper was devoted to this reign. The scope of his collection of the coins of this reign is perhaps best illustrated by the presence of twenty examples of the Oxford triple unites, representing all varieties.

It is not always the case, however, that major collectors are also serious students of numismatics. Herbert Schneider was a strong exception, however, and he developed a knowledge of his subject second to none. Although he only collected gold coins he had a considerable knowledge also of the silver and copper coins of the period in which he was interested, as is evidenced by his review of the late C. Wilson Peck's great work on copper, tin and bronze coins. He was a prolific correspondent, despite many other claims on his time, and he was never happier than when studying his coins and either writing articles or corresponding with other numismatists. There can be few, if any, students of this particular series of coins who were not aware of Herbert Schneider and his formidable collection.

Herbert was elected a member of the British Numismatic Society in 1944 and appointed a Vice President in 1968. He would surely have been President had he lived in England. He was awarded the Sandford Saltus medal from the BNS in 1965 for the numerous works and articles which he contributed to the *British Numismatic Journal*. In his own words he referred to this medal as the 'Victoria Cross of Numismatics'. At the end of this obituary notice will be found a list of his numismatic publications, from which the extent of his

interest in, and knowledge of English gold coins will readily be seen. The most important works are those on the Tower gold of Charles I, published in four parts, and the hammered coins of Charles II. These works are, and will remain, the standard work of reference for these coins.

I came to know Herbert Schneider personally in 1946 and over the years we formed a strong association in numismatics and a very close friendship. He was a man of great modesty and charm who was unfailingly polite and helpful to everybody. He was possessed of a delightfully impish sense of humour which came out strongly in the voluminous correspondence we conducted over the years: the files relating to his instructions for the Lockett sales alone would fill a useful sized volume.

A sylloge of the Schneider collection of gold coins is under preparation and it is hoped that this will prove a fitting memorial to a great numismatist and a much loved friend.

D. G. LIDDELL

PUBLICATIONS OF HERBERT SCHNEIDER

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|---|--|
| <p>1950
'Modern Sovereign Forgeries', <i>NCirc</i> 58 no. 12 (MSC), 732.</p> <p>1953
'A note on Mr Whitton's paper 'The Coinage of Henry VIII and Edward VI in Henry's name', to which are added certain Addenda and Corrigenda', <i>BNJ</i> 27, pt. 2 (1953-4), 195-203.</p> <p>1956
'An angel of Edward V in the Herentals (Belgium) Treasure Trove', <i>BNJ</i> 28, pt. 2, (1955-7), 312-6 and pl. 25, 19.
'The Tower gold of Charles I. (Part I)', <i>BNJ</i> 28, pt. 2, (1955-7), 330-85 and pls. 16-17.</p> <p>1957
'The five guinea and two guinea pieces of George II, listed by dies', <i>NCirc</i> 65, no. 1, 8-12 and no. 2, 43-55.
'A new half-sovereign mule of Henry VIII/Edward VI', <i>BNJ</i> 28, pt. 3, (1955-7), 658-9 and pl. 37, 10.</p> <p>1958
'The Tower gold of Charles I, Part II', <i>BNJ</i> 29, pt. 1, (1958-9), 101-27 and pls. 7-8.</p> <p>1959
'The Tower gold of Charles I, Part III', <i>BNJ</i> 29, pt. 2, (1958-9), 382-403 and pls. 15-16.</p> <p>1961
'The Tower gold of Charles I, Part IV', <i>BNJ</i> 30, pt. 2, (1960-1), 302-30 and pls. 15-17.
'The 'Regina' coins of James I and Charles I', <i>SCMB</i> (December, 1961), 469.
Review of C. W. Peck, <i>English Copper, Tin and Bronze Coins in the British Museum, 1558-1958</i>. <i>RBN</i> (1961), 258-61.</p> | <p>1962
'Mr Schneider's Review of Mr Peck's Catalogue'. (A translation over the initials M.M.O'D of Mr Schneider's review published in <i>RBN</i>, 1961.) <i>N.Circ</i> 70, no. 9, (1962), 187-88.
Review of Sir Geoffrey Duveen and H. G. Stride, <i>The History of the Gold Sovereign</i>, <i>RBN</i> (1962), 312-8.</p> <p>1964
Review of H. G. Stride, <i>Nickel for the Coinage</i>, <i>RBN</i>, 1964, 168-72.</p> <p>1965
'Chronological problems of the Pinecone-Masle coinage of Henry VI', <i>BNJ</i> 34, (1965), 118-20.</p> <p>1967
'The hammered gold coins of Charles II', <i>BNJ</i> 36, (1967), 122-68 and pls. 10-13.</p> <p>1968
'The significance of the archaeological evidence in a review of a French hoard of English gold coins', <i>BNJ</i> 37, (1968), 73-84 and pls. 1-4.
'Six reines dans la numismatique Anglaise', <i>CENB</i> Vol. 5, no. 2, (1968), 22-30 and ill.</p> <p>1974
'A note on "The Rose Group" angels of Henry VII', <i>NC⁷</i> 14, (1974), 193-7 and pl. 16E.</p> <p>1979
'The Tower gold of Charles I: problems of survival ratios; three new angel dies', <i>BNJ</i> 49, (1979), 74-81.</p> <p>1983
Lot 216. <i>NCirc</i> 91, no. 7, (1983), 221-2.</p> |
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A TRIBUTE TO HELEN FRIZZELL

(Here follows the text of an address delivered at the Memorial Service for Helen Frizzell, held at St Michael's Church, Chester Square, London, on 21 June 1990.)

HELEN, she never used her other names Diana Isabella, was born on New Year's Day 1940, the only child of Nora and George Frizzell of 7 Hexham Road, Heddon-on-the-Wall, a few miles west of Newcastle – an address which was to be her home all her life. She attended the local school in Heddon, and later, a private school in Newcastle. When she was fifteen years old, her father, George, who had seen service in the Royal Marines, died at the age of 53 years. She was christened and later confirmed at St Andrew's Church, Heddon, where her funeral service was held, just around the corner from her lifelong home.

On leaving school she worked at the Ministry of Pensions, big in Newcastle. It was there that she got to know a paraplegic who was confined to a wheel chair – it was not until Helen arrived that she found anyone to push her up to the canteen for lunch. Typical of the Helen we all got to know.

After some years, Helen went to work for a coin dealer in Newcastle, and in 1968 came to London to run their newly opened London office.

I first met Helen early in July 1969 when, after work one afternoon, she came to see me about a job, prompted by a coin dealer here to-day who used to call on her, and who had gleaned that she would like a change. I well remember the interview, for money, usually the vital ingredient, was not mentioned. She was committed to one month's notice to her employer, would then take two weeks' holiday, and start on 11 August. Little did I know what the future was to hold.

Baldwin's is a small firm and has only ever employed one person in a secretarial capacity; so, when the need arose, Helen was also emergency tea lady, post clerk, book-keeper or what have you, as, indeed, we all were in a firm at most ten strong. From the beginning she impressed me very quickly how reliable she was when attending London coin auction sales, where she became a familiar face, be it at Glendining's, Sotheby's or Christie's.

Soon after Helen's arrival, we moved office into 11 Adelphi Terrace, a rather more pleasant building with plenty of natural daylight, and where Helen found it easier to meet clients. As time went by she got to know more and more of them, sometimes visiting them, sometimes being wined and dined by them. And very soon, Helen was running her own numismatic parties, playing the role of cheerful hostess to a complete cross-section of coin buffs, national museum curators, government ministers, Uncle Tom Cobley and all. There was always one such gathering in October for Coinex, the London Coin Fair, and another before Christmas – and very lively affairs they would turn out to be.

I know there were similar gatherings for other circles of friends, carefully chosen, matched if you like. I well remember being invited to lunch one Sunday. Did I really want to come into town on a summer Sunday to meet an unknown client, a colonel and his lady? Well, it was late enough for me to have my Sunday morning outing on the river in the VIII beforehand. And it would be Greek, so the boss had better turn up clutching bottles of retsina and sweet wine from Samos. Lunch finished at around 7 o'clock, and Bill and Angela were to be our guests at Henley. Many of you, I know, can tell a similar tale.

How she managed to do all her entertaining on her own, latterly from the cubby-hole of a kitchen at St George's Square was little short of amazing, though a furniture mover or wine waiter was often pressed into service! Although she was getting weaker by the day, and had only just returned from what must have been an exhausting trip to New York, she still threw her usual party last Christmas.

And yet Helen was a very private person, and her activities and friends were

compartmentalised which is why this tribute might be considered rather one-sided. Others would view Helen from another angle, a different compartment. One very soon realised that what most, and certainly I, would consider of general interest and knowledge, Helen, with regard to herself, would consider absolutely confidential. One hardly dare ring her door bell without prior arrangement, so much so that my co-executor did not dare do so when her car broke down outside Helen's door!

In early days, I remember, she seemed to manage to get to many London shows, concerts and the like, but one never knew, until one might overhear her recommending a particular show to an American customer. One February, returning from holiday as brown as a nut, it was evident we were not going to be told where she had been. Perhaps two years' later, in conversation with an American collector, he let slip that Helen had been to Cuba. And some while later, in a relaxed moment, I was shown a snap of Helen wrapped in the arm of a large athletic Cuban. It was Juantarena, no less, the Olympic gold medallist, a greater hero than Castro.

Helen came further into her own when the firm's telephone system was re-organised, and all incoming calls were routed through her. Hitherto, she had chatted to people when she saw them, but now everyone was greeted before they were put through: softened up, some might say. The friendliness was not always limited to greetings – our accountant, with a self-admitted terrible sense of honour, always had diet of black bullets, local Newcastle mints, after a visit. And outside the office, the company car was soon put to constant use, often to the benefit of clients, as Helen played the willing chauffeuse.

Helen loved travel, used, one might think, as a medium for meeting people. Not that I was always party to where she might have been. On several occasions she attended the annual congress of the international dealers' association – held at Whitsun at some pleasant or exotic spot – where she could not have been more popular. But then I always said that she knew far more people in the coin business than I did. For three years she worked the tannoy at the International Coin Fair in New York in December, and I often wondered whether any American realised that he was being addressed in a Geordie accent. I have heard of travellers' tales too numerous to mention, of meeting Daniel Fearon's former neighbours on the Great Barrier Reef, and in America asking someone for the local drugstore and going back on holiday the next year to stay with the same someone. Her address book was always handy.

Only last September, accompanied by Lynne Abbess, she stayed as a guest at a Greek customer's holiday home on Santorini, virtually gatecrashed an academic conference, which she knew was being held on the island, introduced herself, and in turn was introduced to many more academics. And at all times, especially when travelling, she enjoyed using her camera. No one need ever lack for a group photograph when Helen was around to operate a camera. And in spite of all these activities, Helen would be the first to say that she was shy.

The move to St George's Square gave her a small terrace with space for flowers, from which she got much enjoyment. Since surgery she often stayed in Sussex with friends with a large garden, and got much pleasure from visiting places such as Sissinghurst.

For many years she attended meetings of the British and Royal Numismatic Societies and recently became very involved with the newly formed British Art Medal Society, being made responsible for fund-raising and sponsorship of their excellent, and thus expensive, biannual journal. All three societies are remembered generously in her will.

Summer 1988 Helen told me she had problems with cancer and underwent major surgery in the September. On hearing the news, one Californian client had Berry Bros and Rudd deliver a case of champagne to St George's Square. Helen didn't drink champagne – doubtless some of you benefited. Another, from the West Indies, effectively paid her clinic bills for her. And it was typical of Helen, the straight-talking Geordie, that she wanted no visitors in hospital, which some found hard to understand; I do believe, some were turned

away at the ward. It was on the ward that I first met Helen's mother – after twenty years! A grand old lady I only wish I had been given the opportunity to meet before. The subsequent prognosis was not encouraging. Helen adopted a very aggressive attitude to her problems and one did one's best to support and encourage her. She certainly did not let on; many, even at a late stage, had no idea that she was terminally ill. As late as February she took encouragement from a nasty attack of shingles, in that shingles became the problem, not cancer.

On 4 March, Helen entered a clinic in Kidderminster, whence, on the 10th, I received a note giving details of a rather bleak future, but that 'the little devil inside me doesn't realise he's dealing with a Geordie'. Ten days later, she passed away in Westminster Hospital.

When one looks back on Helen's life, one sees a forthright, friendly Geordie who led an extraordinarily full life, full of action and full of people. And yet she maintained a very close relationship with her widowed mother, and close contact with her home and friends in Heddon. Although she constantly underplayed her role in the firm, latterly introducing herself as 'dogsbody', I would like to think in large part she enjoyed her work as well. Certainly the people in the coin world enjoyed her. Of some three hundred letters received by her mother one, perhaps, speaks for us all, and I quote 'Of all the many women it has been my pleasure to have contact with in my professional and numismatic life, none has been more outgoing, more genuine or positive than she. Being a northerner myself means perhaps that I was well placed to appreciate her cheerful, forthright manner, but her wide circle of friends can leave one in no doubt of how generally popular and appreciated she was. We shall miss her very much.'

PETER MITCHELL

PROCEEDINGS OF THE BRITISH NUMISMATIC SOCIETY, 1989

The President, Dr Challis, was in the chair at all meetings, these being held at the Warburg Institute.

On 24 January the President announced the death of our Vice-President, Mr Herbert Schneider, and of our Honorary Member, Mr Philip Whitting. Mr Adam Croton and Mr Christopher Webb were elected to Ordinary Membership. Five short papers were read regarding Williamson and seventeenth century tokens.

1. 'Williamson, the man and his books', by Mr Robert Thompson.
2. 'Williamson and Guildford', by Mr Anthony Merson.
3. 'Dividing seventeenth century tokens between London and Middlesex; adjusting Williamson's boundaries', by Mr Philip Greenall.
4. 'Williamson's contributors', by Mr Peter Preston-Morley.
5. 'Replacing Williamson', by Mr David Griffiths.

On 28 February, the President congratulated the Director, Mr Robert Thompson on the twenty-fifth anniversary of his election to the Society. Mr Jonathan Kilgore-Knight and Mr Stephen Lear were elected to Ordinary Membership. Mr J. Booth read a paper entitled 'The coinage of Berhtwulf of Mercia, 840-852'.

On 4 April, Mr Jens Christian Moesgaard and the Sussex Archaeological Society, Lewes, Sussex were elected to Ordinary Membership. Dr A. M. Burnett read a paper entitled 'Ancient British coins in the light of some new hoards'.

On 25 April, Mr R. J. Strange was elected to Ordinary Membership. Mr C. P. Barclay read a paper entitled 'The origins of the 'Godless' florin'.

On 23 May, the President announced the death of Mr Christopher Brunel, a member for nearly twenty years. Mr Ian T. Roper and Mr Christopher Russell Wren were elected to Ordinary Membership. Mr Roper was admitted to Ordinary Membership. Dr John Kent read a paper entitled 'Coinage and currency in London under the later Tudors and Stuarts'.

On 27 June, Mr B. G. Hamilton was elected to Ordinary Membership. Dr R. J. Eaglen read a paper on the Long Cross coinage of Bury St Edmunds.

On 26 September, Mr J. Scott Rottinghaus was elected to Junior Membership. Dr R. G. Doty read a paper entitled 'In the footsteps of the Founders: Boulton Watt and Company, 1809-1850'.

On 24 October, Mr Michael John Cuddeford and Mr Nick Wetton were elected to Ordinary Membership. Three short papers on medals were read, having particular reference to campaign medals.

1. Mr G. P. Dyer read a paper on the General Service Medal, 1918-1962.
2. Mr C. Eimer read a paper entitled 'Sir John Craig and medal making at the Royal Mint, 1938-1949'.
3. Mr Joe Cusson read a paper on the Medal Department at the Royal Mint, with special reference to the South Atlantic Medal.

At the Anniversary Meeting held on 28 November, Mr Philip Hunt, Mr Kenneth R. Murray, and Mr A. M. Newing were elected to Ordinary Membership. The following Officers and Council were elected for 1990.

President: C. E. Challis, BA, PhD, FSA, FR HistS.

Vice Presidents: G. V. Doubleday; C. S. S. Lyon, MA, FSA, FIA; The Right Hon. B. H. I. H. Stewart, RD, MA, DLH, PhD, FRS Ed, FBA, FSA, FSA Scot, MP; P. Woodhead, FSA

Director: R. H. Thompson, ALA

Treasurer: T. G. Webb-Ware, MA, ACA

Secretary: W. Slayter

Librarian: R. Bland, BA

Editors: B. J. Cook, BA, PhD; G. P. Dyer, BSc.

Council: C. P. Barclay, MA, M Litt, FSA Scot; D. Bateson, BA, PhD, FSA Scot; M. J. Bonser; R. J. Eaglen, MA, LL.M, PhD; C. Eimer; D. Fearon; P. D. Mitchell; H. E. Pagan, MA, FSA; D. Sellwood, MSc, CE, MI Mech Eng; G. C. Sommerville, CE, MI Mech Eng; P. E. F. Stott, MA, FSA Scot

Council's proposals that the subscriptions for 1990 should remain unchanged at £18 for Ordinary Members, and £7.50 for Junior Members were adopted. The Sanford Saltus Medal was awarded to Mr H. E. Pagan. The President, Dr C. E. Challis delivered his Presidential Address.

AUDITOR'S REPORT TO THE MEMBERS OF THE BRITISH NUMISMATIC SOCIETY

I have audited the Balance Sheet and Income and Expenditure Account by reference to the books and records of the Society and supporting information and explanations.

In my opinion these financial statements are in accordance with those records and correctly show the state of the Society's Fund as at 31 October 1988 and of the Surplus of Income over Expenditure for the year ended on that date.

R. A. MERSON, FCA
Honorary Auditor

Balance Sheet as at 31 October 1988

1987		1988	
£	£	£	£
<i>GENERAL PURPOSES FUND</i>			
15,663			17,607
1,944			1,690
<hr/>		<hr/>	
17,607			19,297
<hr/>		<hr/>	
<i>Surplus carried forward</i>			
 <i>Represented by:</i>			
<i>ASSETS</i>			
160			160
81			63
444			744
			6,000
6,000			
37,051			
347			
<hr/>		<hr/>	
44,083			39,188
<hr/>		<hr/>	
			46,155
 <i>Less: LIABILITIES</i>			
186			336
167			167
5,474			5,725
161			73
538			1,027
19,950			19,530
<hr/>		<hr/>	
26,476			26,858
<hr/>		<hr/>	
£17,607			£19,297
<hr/>		<hr/>	

1 : <i>Linecar Fund</i>	£
Balance at 1 November 1987	5,474
Deposit Account Interest	501
	<hr/>
	5,975
1988 Linecar Lecture Fee	250
	<hr/>
Balance at 31 October 1988	£5,725
	<hr/>

*Income and Expenditure Account
for the year ended 31 October 1988*

1987		1988	
£	£	£	£
	INCOME		
	Subscriptions and Entrance		
	Fees received for 1988		
8,492	and earlier years		8,452
3,514	Interest received		3,489
110	Donations		386
	Sale of Publications:		
694	Backnumbers	120	
42	Photographs	-	
268	Carausius & Allectus	70	190
<hr/>			<hr/>
13,120			12,417
	Less: EXPENDITURE		
150	Sanford Saltus Medal	150	
296	Printing, Postage and Stationery	388	
300	Library – Purchases	300	
200	Binding	200	
154	Other Expenses	474	974
		<hr/>	
156	Storage of Publications	90	
31	Photographs	-	
92	Carausius & Allectus	17	
297	Sundries	250	
<hr/>			<hr/>
1,676		1,869	
	<i>British Numismatic Journal 58</i>		
9,500	Provision towards cost	10,800	
-	Less: City of Aberdeen grant	2,000	
-	Add: Underprovision for prior Journals	58	
<hr/>			<hr/>
		8,858	
11,176		<hr/>	
<hr/>			<hr/>
£1,944	EXCESS OF INCOME OVER		10,727
<hr/>	EXPENDITURE		<hr/>
			£1,690
			<hr/>

PRESIDENTIAL ADDRESS 1989

C. E. CHALLIS

At this anniversary meeting, the eighty-fifth of the Society and the first of my Presidency, our membership is much as it was this time last year, the reduction attributable to the six members just moved, four resignations and three deaths being compensated by sixteen new elections. Of our 513 members, 388 are ordinary, four are junior, and 121 are institutional.

Of the three members who died, two, Christopher Brunel and Philip Whitting did not serve on our Council but the third, our Vice-President and Sanford Saltus medallist, Herbert Schneider, most certainly did, Christopher Brunel, who died on 27 April after a short illness at the age of sixty-eight, was elected to our Society in 1970 and in the following year made a lasting mark in the numismatic world by founding, with Jean White, the Token Corresponding Society. Subsequently, he became the first editor of that Society's *Bulletin*. Although he was never a contributor to our own *Journal* he did publish on a number of token themes, especially in *Coins and Medals*. Philip David Whitting, who died aged eighty-five on 14 December 1988, had been a member of our Society since 1954 and in later years was made an honorary member. For me, as also I suspect for many other members of our Society, my acquaintance with Dr Whitting came partly through the pages of the pamphlet which he wrote for the Historical Association, *Coins in the Classroom* (1966), and partly through the conferences of the British Association of Numismatic Societies at which he was a regular attendee and of which he served a term as president. Despite some publication in our own field of British numismatics, notably his *Coins, Tokens and Medals of the East Riding of Yorkshire* (1969), it is through his contribution to Byzantine numismatics that he will be best remembered. His papers in learned journals are too numerous to mention here, but we may note his book *Byzantine Coins* published in 1973 and the gift three years earlier of his superb collection of Byzantine coins to the Barbour Institute of Fine Arts at the University of Birmingham.

Herbert Schneider, who died on 6 January at the age of seventy-four, I only came to know in the later years of his highly successful life. I needed a firm and scholarly numismatic eye to be cast over the manuscript of my book which, though dealing with Tudor coins and their production, had been written largely from contemporary administrative records. With characteristic generosity he acceded to my request and in the ensuing months portions of my text, neatly marked in crayons of different colours, were returned in sequential order together with detailed lists of queries, helpful suggestions, and corrections. Mr Schneider's interest in numismatics, stretching back to his schooldays when he first began to collect, was the preoccupation of a lifetime during which he assembled a collection of English gold coins, from Henry III to the present day, which was unrivalled outside our national collection. Since it was in the mill series that his collection was entirely complete, it is not surprising that Mr Schneider ventured to list by dies in the *Numismatic Circular* for 1957, the five- and two-guinea pieces of George II but it was in his first love, the hammered series, that he made his main contribution to numismatic scholarship. In our own *Journal* he published in 1957 'The Tower Gold of Charles I' and a decade later 'The Hammered Gold Coins of Charles II'. Today, both articles are still required reading. Though a frequent visitor to this country, his domicile in Antwerp and his heavy commitment to the family business always meant that he attended our meetings less frequently than he would have wished and in later years there can have been few members who saw him at all. Be this as it may, Herbert Schneider had a long and abiding interest in our Society, it is fitting that his name is perpetuated in our proceedings by the fund he established to further numismatic research, and unquestionably he will be missed by a wide and appreciative numismatic acquaintance.

Consequent upon your electing me as President, there have been two further changes among our officers and editors: Graham Dyer has become an editor and Robert Thompson has replaced Mr Dyer as Director. It was in 1980 that Mr Dyer took over the responsibility of arranging our lecture programme and the following decade of service was marked by two outstanding features. The first was an assiduous attention to the planning of a balanced programme – balanced, that is, in terms of chronological spread, of competing fields of numismatic interest, and of speakers, drawn not simply from London and the South-East but from the rest of the British Isles and abroad. Personally, I have enjoyed and benefited from our annual bill of fare and I feel sure that this is a view which will be widely shared. The second feature to which I would draw attention is the implementation of a policy designed to strengthen the notion that we are truly a British Society by holding meetings outside London. Twice we have ventured forth to Birmingham, once to York and once to Wales and on each occasion our audience was notable not simply for its size and enthusiasm but also, and most importantly, for its containing members who would not otherwise have attended one of our meetings. It is appropriate indeed that we mark Mr Dyer's stepping down on a sincere note of appreciation.

In saying these words, I do not for one moment suppose, and I know that Graham Dyer would be at one with me on this point, that achievements are made in isolation. What we do, we do together as a Society, under the

leadership of our President, and between 1983 and 1988 we were particularly fortunate in having Hugh Pagan to serve us in this capacity. In one important dimension – the financial – his was a most fortunate time, for the Society enjoyed a favourable balance at the bank while at the same time publishing a substantial *Journal* for which subscribers paid at an unchanged rate. This achievement – assuredly the envy of his immediate predecessors and possibly also of his successor! – was, of course, directly connected with the costs of printing which in the 1980s shifted relatively speaking in favour of the consumer. But good housekeeping also played its part and that is something which we must try to emulate in the future. Mr Pagan's gentle, yet firm touch, his fastidious courtesy, and his attention to detail, ensured that throughout his term of office our affairs, whether in Council or in our general meetings, were handled effectively and with good will. Wherever he has represented us – whether it be at a small funeral gathering or at the great International Congress in 1986 – he has done so with dignity and presence. Above all, in his presidential addresses he has made a distinct and important contribution to knowledge. As the editor of four of these addresses I speak with some certainty of the care taken in drafting, the precision of referencing, and the clarity of expression. All in all, his will be a difficult act to follow.

While it is right to have spent time rehearsing our debt to two retiring officers, this is by no means to forget the valued services, first, of our Secretary, Wilfrid Slayter, who continues as indefatigable as ever, of our Treasurer, Mr Webb-Ware, who maintains our finances in immaculate order, and our Editor, Dr Cook, who shouldered the burden not only of seeing our *Journal* through the press with a better set of illustrations than we have had for many a year, but of assembling and editing our successful new departure, the 'Coin Register'. Our Librarian, Mr Bland, who also doubles as the librarian of the Royal, deserves particular mention for organizing, essentially through Messrs Spink, the sale of duplicate copies of books from our joint library. It is hoped that the proceeds, £6,499, will be used to enter the library catalogue on a computer which will be especially purchased for the purpose, to carry out much overdue binding or re-binding of volumes, and to plug gaps in our existing holdings through the purchase of books.

In our programme this year we were particularly pleased to have Dr Kent, Keeper of Coins and Medals at the British Museum, as our speaker on the evening of the Council sherry party. Earlier and later in the year we had speakers widely separated in subject matter and chronology, ranging from Dr Burnett on Ancient British Coinage to Mr Joe Cussen on the South Atlantic Medal, struck following the Falklands War. Mr Cussen was one of three speakers at our October meeting – the two others being Mr Dyer and Mr Eimer – who stepped in at short notice to fill the vacancy left when Mrs Smurthwaite unexpectedly withdrew. I record here our gratitude to them and express the view, which I know was widely shared at the time, that, scratch programme or not, it was a most entertaining and informative occasion.

Mention of Mr Cussen, who is Press Officer at the Royal Mint, reinforces the fact that 1989 was a year in which we had particular cause to thank the Mint for its friendly and helpful gestures towards us. To begin with I was invited to represent our Society at receptions planned to launch three new coins: on 31 January I went to the Tower of London, where 500 years ago the very first sovereigns were struck, to celebrate the latest sovereign issue; on 14 February I was at the Speaker's House at Westminster for the unveiling of a new £2 coin, commemorating the tercentenary of the Bill of Rights; and on 11 April I went to Edinburgh Castle for the launch of the Scottish version of the £2 coin, commemorating the tercentenary of the Claim of Right. While each occasion was memorable for its own sake, one feature which was common to all three and upon which it is appropriate to comment this evening was the care that had been taken to ensure that there was a strong numismatic presence. Seldom indeed do museum curators, academics, prominent collectors, dealers, and members both of the Royal and of our own Society have such opportunities of meeting together in such numbers and of discussing numismatics with ministers and other distinguished guests. It was both flattering and imaginative of Mr Garrett, Deputy Master of the Royal Mint, to afford our subject such a high profile at these events and it is my pleasant duty to show recognition of this now.

On 21 April the Society visited the Royal Mint at Llantrisant. Professional commitments prevented the Deputy Master from welcoming us on that occasion but Mr Williams, Head of Marketing, stood in for him and inaugurated a day in which the high point was a tour of the factory. While the success of the visit hinged on careful preparations made by the Curator of the Mint museum and his staff there can be no doubt that this was in every sense a team effort, from senior management to staff on the factory floor, all of whom made us at home and answered our questions with patience and care. Little more than twenty years ago, as government and senior Mint officials struggled to establish the new factory in Wales, Llantrisant was derided in the press as 'the Hole with a Mint'. Today it is what its planners intended it to be, a highly respected first-division mint, successfully competing in the market places of the world. The measure of its achievement is that in the past five years it has engrossed into its hands roughly half of the coinage trade available in the Free World. On 21 April, therefore, we did not see just another mint, we saw something which was exceptional: something that will long endure in the minds of its grateful visitors.

I began this report on the past year by alluding to the size of the Society and it is with a further comment on the same issue that I wish to conclude. Given the existing number of subscribers, a substantial subscription rate, and a decent income from interest arising on our monies at the bank, we are still able to produce a substantial journal, well illustrated, printed, and bound, and yet at the same time break even. It is clear, however, that

inflation is eroding this position ever more quickly, and, if we wish to maintain the quality and size of our *Journal*, we must look for ways of increasing our income. The most obvious, and one to which we may have to resort in the not too distant future, is to increase the subscription rate. Another is to attract new members. Given that the Society belongs to each and every one of us it is the case, in the last analysis, that it is incumbent upon us all to bring in new members whenever we can, and I urge you all to be diligent in this regard. I should also like to point out that in recent months Council has given careful consideration to the matter and has agreed a package of measures which it hopes will be tangible and attractive incentives to join the Society. To begin with, we propose that a new member shall be eligible to purchase the five immediately preceding volumes of the *Journal* at the reduced rate of £10 per volume and be entitled to receive free of charge a consolidated list of the contents of all our previous *Journals*. Since the cost price of a single volume is at present £25 this offer represents a significant saving. Second, we propose that the Society should commission a medal to be sold to each new member, each being personalized by the year of admission and the name of the new member being inscribed on the edge. The medal would be available to existing members on the same terms and a striking in silver, at an enhanced charge, would be available to members wishing to celebrate their silver-jubilees. Additionally, it is proposed that in future such substantial benefactor of the Society shall be entitled to receive one of the Society's medals free of charge, as a token of our appreciation. A consequence of this new departure, one of which I hope you will approve, is that we shall be able in some small way to foster medallic art and to encourage young artists: a competition to produce appropriate designs will be organised as soon as possible. I should emphasize that it was Council's intention, if at all possible, for this competition, for making the dies, and for a stock of boxed, finished pieces to be met through benefactions rather than from our reserves, and I am delighted to say that already we have made good progress in this direction. How splendid it would be if I could say this time next year that, no sooner had this initial announcement been made, than the remaining portion came just as quickly and as easily to hand!

Finally, I turn to list the coin hoards of the past year. Mr Besly informs me that there are no hoards from Wales. On the other hand, Dr Bateson has furnished me with the following list for Scotland:

Dull, Perthshire, 1989. Pile of, perhaps, nine Anglo-Saxon pennies, apparently Æthelred II's Long Cross type, found fused together.

Wellington Park School, near Leadburn, Midlothian, 1989. A find of seventeen pennies, sixteen of Edward I/II and one of Alexander III.

Inchaffrey Abbey, Perthshire, 1989. Three Edwardian pennies found corroded together with traces of cloth wrapping.

Glenochar, Lanarkshire, 1988/9. Five Elizabeth I sixpences (1566-93) found during excavation of bastle house - examination of area of find incomplete.

Whitburn, West Lothian, 1988. One French gros and 242 pennies of which 208 are Edward I/II, twenty-one Scottish, mainly of Alexander III, twelve Irish and one continental imitation.

Broad Bay, Isle of Lewis, 1989. Excavation of a burial yielded a hoard of seventeen coins consisting of thirteen bawbees (1677-9) and one Irish halfpenny of Charles II, as well as two Dutch double-stuivers and one Austrian thaler.

Spynie Palace, Morayshire, 1986. One Anglo-Gallic and thirty-two French (1385/1422-1497/1521) jettons, along with a fragment of a European coin, were found together during excavations.

For England Miss Archibald has made the tally as follows:

Celtic

Whitechurch, Hants., (additional). January 1989. Seven AU Gallo-Belgic and British class B staters, c.50 BC.
Cheriton, Hants., (additional). September 1989. Fifteen AU British class D staters, and quarter-staters, c.50 BC.

Snettisham, Norfolk. (additional). May 1989. Six AU Icenian staters, early 1st century AD.

Winterbourne Monkton, Dorset. (additional). December 1988. Forty-two AR Durotrigian staters and quarter-staters, 1st century BC.

Ingoldisthorpe, Norfolk. March 1989. Two AU Gallo-Belgic staters, c.60 BC.

Cobham, Surrey. January 1989. Two AU and three AR, staters of Cunobelin and Roman denarii, c.40 AD.

Roman

Membury, Wilts. May-Nov. 1988. 236 AR denarii, c.43 AD.

Sutton, Suffolk. (additional). Nov.-Dec. 1988. Ten AR denarii, c.43 AD.

Norton Subcourse, Norfolk. (additional). July 1989. Twelve AR denarii, c.43 AD.

Hastings, Sussex. May 1989. Fifty-nine AR denarii and ninety-two AE sestertii and dupondii, 138 AD.

Fotheringay, Northants. October 1988. Forty-five AR denarii, 160 AD.
 Great Melton, Norfolk, (additional). October 1988. Twenty-three AR denarii, 185 AD.
 Postwick, Norfolk, (additional). October 1988. Forty-three AR denarii, 185 AD.
 Barway, Cambs. (additional). March 1989. Seven AR denarii, 190 AD.
 Rockbourne, Hants., (additional). December 1988. Four AU solidi, 394 AD.
 Otterbourne, Hants., (additional). October 1989. Five AR siliquae, 410 AD.
 Kenilworth, Warwicks. January 1989. Six AR denarii, 150 AD.
 Wishaw, Warwicks. July 1988. 156 billion antoniniani, 290 AD.
 Chalfont St Peter, Bucks. Sept.–Oct. 1989. About 9000 billion antoniniani, 274 AD.
 Chalgrove, Oxon. August 1989. 3823 billion antoniniani, 282 AD.
 Yate, Avon. February 1989. 731 billion antoniniani, 290 AD.
 Downside, Somerset. 1987. 538 billion folles, 317 AD.
 Milton Keynes, Bucks. May 1988. Fifty-three billion folles, 317 AD.
 Fishbourne, Isle of Wight (additional). Winter 1987–8. Seventy-one AE, 388 AD.
 Whitchurch, Hants. February 1989. Forty-eight AR siliquae, 410 AD.

Medieval and Modern

Plumpton, Sussex. February 1989. Four AR. Anglo-Saxon pennies and silver mounts, c.950.
 Whitchurch, Hants. January 1989. Seventy-seven AR Long Cross pennies, c.1270.
 Wicklewood, Norfolk. May–June 1989. 442 AR pennies, cut-halfpence and -farthings of Stephen and Henry II, c.1170.
 Norton Subcourse, Norfolk. Autumn 1988–Spring 1989. Thirty-five AR pennies, cut-halfpence and -farthings of Henry II, c.1175.
 Revesby, Lincs. February 1989. 109 AR. Elizabeth–Charles I. 1643/4.
 Sandhills, Dorset. January 1989. Eighty-two AR, c.1680.
 Teynham, Kent. August 1989. Twenty-three AU guineas and half-guineas, and six banknotes, 1800.
 Street, Sussex. September 1989. Nine AU continental coins, 1550s.

IN the second part of my address I wish to turn my attention to the introduction of coinage machinery into the Royal Mint in the reign of Elizabeth I by the Frenchman, Eloy Mestrell. This is a subject I have touched on in the past and I now do so again in direct response to two articles which have recently appeared in the *Numismatic Circular*, one by Professor Gaspar and the other by Mr Cooper, in which it is suggested that we must call in question the established view that Mestrell produced his coins in a screw press.¹ Let me say at once that I am all in favour of the re-examination of views if there appear to be good grounds for doing so but in this instance, it seems to me, the case has not been properly made yet, at the same time, a number of numismatic hares have been released which, if not quickly recalled and declared permanent non-runners, may with the coming of Spring career ever more capriciously about and leave Mestrell and his coinage nothing but a muddle.

Let us remind ourselves briefly of what the issues are by looking, first, at Professor Gaspar's argument. His starting point is the research he did with Mr Dyer on the coins of the eighteenth century which led to the conclusion that the use of the screw press without a restraining collar resulted in the metal in the blank being pushed outwards at the point of impact of the dies, leaving the coin with an impaired design in the form of fugitive beading and letters with fish-tails.² This characteristic is not normally associated with Mestrell's coins which display elegant lettering with neat, straight bottom edges. Possibly this lettering owed nothing to Mestrell, for we know that he purchased a dozen puncheons in December 1560 and a further three dozen and eight in the following month. Equally, the lettering could be

NOTES As given, this was an illustrated lecture for the most part dependent upon slides obtained through the good offices of Dr B. J. Cook of the Department of Coins and Medals at the British Museum and Mr G. P. Dyer of the Royal Mint. In this printed version all reference to the slides has been removed and the text marginally adjusted to give a continuous prose style.

¹ P. P. Gaspar, 'Mestrell's minting methods – a query', and D. R. Cooper, 'Mestrell's minting methods – a comment', *NCirc* (1989), 187–8 and 257–9.

² G. P. Dyer and P. P. Gaspar, 'The striking of proof and pattern coins in the eighteenth century', *BNJ* 50 (1980), 117–27.

entirely his, leaving the other puncheons to relate to another part of the design. At all events, we can be sure that the overall design of Mestrell's dies was his own and that he engraved the dies himself. Two contemporary references leave no room for doubt on this score: the first refers to 'colours bought for Eloy at his sending for to Richmond to have drawn the queen's picture', and the second to the expense of his having to 'grave and work nigh the Court'.³

Now, given the elegant, undeformed lettering on Mestrell's coins, had he used a collar nothing further would need to be said but visual examination, especially that by Hocking which revealed burrs on the edges of some coins which are not compatible with the use of a collar, has long meant that the conventional wisdom is that Mestrell did not use a collar.⁴

Professor Gaspar's problem, then, is this: if coins with fish-tails result from the absence of a collar when a screw-press is used, is it sensible to suppose that coins without fish-tails, also struck without a collar, can have been struck by the screw-press? If the answer is 'no', what other method could have been used? Briefly, Professor Gaspar considers the roller-press and the rocker-press but finds their use hard to reconcile with what we know, first, about the small number of die links amongst Mestrell's coins, and second, about the burrs on the edges of his coins. In the end he leaves us with a mystery which can only be solved, he says, by further research of both a documentary and a technical kind.

These elements of mystery and a suggested way forward are also to be found in Mr Cooper's contribution but our second author differs from the first in making a number of further suggestions, the principal of which is that Mestrell used the traditional hammering technique. For Mr Cooper the shadow marks around the letters on some of the sixpences he examined at the Royal Mint result from more than one blow being delivered to the dies. Mestrell may, he says, have favoured 'a tilting technique using four blows', i.e. the upper die was tilted outwards away from the vertical and struck to bring up one segment of the coin, before being tilted sequentially and struck three times more until the whole design had been made. One coin which he examined lacks a small, apparently, curved piece at its edge and this deficiency suggested to him that it had been cut from strip. This strip, he surmised, may have been 'hammered to near final gauge and then finished-rolled', in a horse-drawn mill, though he found it hard to say with certainty 'due to the confusion between blank cutting and rolling' in a contemporary document describing the process. If Mr Cooper is correct, not only has Professor Gaspar been right to call the use of the screw-press in question but, additionally, we must suppose that Mestrell's innovative machinery consisted of nothing more than, first, a rolling mill which could only take strip which had received preliminary treatment under the hammer and, second, a cutter for punching out blanks. On this view, Mestrell had done precious little to destroy the age-old dominance of the hammer both in the preparation of blanks and in coining.

This is one story and against it I should now like to set another, based on a contemporary manuscript written in 1561, estimating the cost of a full complement of machinery for Mestrell's operations.⁵

	£	s.	d.
Item, for one press furnished with all things belonging unto the same [that is] to say, for a press	1	10	
for a worm and a vice to the press		15	8
for 50 lb of copper for the worm and casting of the same	1	10	
for a bar of iron to the press		10	
for a box of steel for the vice		6	8

³ *HMC Salisbury MSS*, I, no. 823, p. 258 [on Microfilm in BL, M485/40, fos 60–3].

⁴ W.J. Hocking, 'Simon's dies in the Royal Mint

Museum, with some notes on the early history of coinage by machinery', *NC* 4th ser. 9 (1909), 72–82.

⁵ BL, M485/40, fo. 63.

the sum of one press as appeareth	5	3	4 ⁶
so that ten presses will amount to	51	13	4
Item, for one pair of rollers furnished with all things belonging [to] them			
for one pair of rollers	4		
for one pair of cheeks		15	
for one vice and a wedge		10	
for one pair of cogs		6	8
for one axle-tree of iron		5	
the sum of one pair of rollers, as appeareth	5	16	8
so that four pairs will cost	23	6	8
Item, a crane wheel to drive the four rollers, as we think	4		
Item, for four cutters, two great and two small	10		
Item, for ten pairs of tongs with stamps unto them	10		
Item, for casting moulds for the ingots, as we think will cost	4		
Sum total		103	

Here we have four quite distinct pieces of apparatus mentioned: presses, rollers, cutters and moulds. That hammers and the stocks in which hammermen traditionally set their dies are not also mentioned is hardly surprising because, although the manuscript does not actually say that the press, of which there were to be ten, is a coining press this is the only reasonable interpretation to be put on the word. Certainly, it is true that contemporaries could and did use the word 'press' to mean rolling press but in this manuscript this was not the case for the simple reason that its author listed the pair of rollers, of which there were to be four, quite separately from the press. Moreover, it would be perverse in the extreme to interpret the penultimate entry – 'ten pairs of tongs with stamps unto them' – as anything other than the dies and the die holders which were to be fitted to the ten presses referred to at the start of the list.⁷

Now, as I said a moment ago, the list I have just been considering is an estimate of what it would cost to set up Mestrell with a full range of equipment and critics could rightly argue that it is not evidence of what actually happened. Fortunately, however, there is clear supporting proof that prototypes of each of the pieces of apparatus listed in the estimates had already been built. The estimate itself is only the last part of a larger document entitled 'Money paid and disbursed by me William Blunt, by the commandment of my master Sir Thomas Parry, late treasurer to the queen's majesty, for the charges of Eloy, the Frenchman'. In the pages which precede the estimate we find a variety of payments relating both to Mestrell's clothes, his costs of travel, and most significantly for our present purpose, the setting up of his new machinery. 'Patterns made of wood for the casting of his ingots' must refer to the implements used to shape the sand bed in which Mestrell would cast his silver ingots, just as '6 lbs of tin to try his moulds' must refer to a trial casting to see if the sand bed actually worked. A shilling paid to a carpenter 'for setting up of the cutting engine in timber' must mean that Mestrell did produce equipment for cutting his ingots into blanks.

⁶ The cost of the components listed here is only £4 12s. 4d, which may mean either that some components have inadvertently been left out, or that the costs of those which are given are mis-stated. The total sum given for the press, £5 3s. 4d, must be correct because at this price ten would indeed amount, as the document states, to £51 13s. 4d.

⁷ To deny Mr Cooper's suggestion that Mestrell struck his coins by hammer does not, of course, invalidate his observation that, if they so wished, hammermen could use a tilting technique in striking. Students of mint output in the reign of Charles I are well acquainted with the faceted appearance of many of the silver coins.

'A small wheel' to polish the rollers, 'plating of a cross of wood to turn the rollers withall', 'for a double wheel to drive the roller that is ready made', and 'a round exiltre [i.e. an axle-tree] made for the rolling engine' must refer to the mill used for flattening Mestrell's silver. And, finally, references to 'a pair of tongs to set his stamps in' and to 'a vice, a worm, and a box of steel for the press' must clearly, in the light of what is said of a coining press in the estimate, refer to the equipment used for striking.

These conclusions are supported by references in other documents. In the account of Thomas Fletewood, under-treasurer at the second mint in the Tower, Tower II, we find a payment of £397 in respect of Mestrell's machinery and maintenance:⁸

Also allowed to the said accountant for money by him paid to the parties hereafter named for certain presses, rollers and cutters of iron and steel and divers other engines, as well for the same iron, brass, steel, lead and such other stuff as for the workmanship and making thereof into the instruments and engines aforesaid, and for divers and sundry kinds of necessities occupied and employed about the new manner of work of coinage of moneys devised by Eloy, the Frenchman, viz.

8 April 1561	to William Hode, blacksmith, for a press and all engines concerning the same	£72
11 December 1561	to William Blunt, having charge of the said work, in part of payment of a more sum,	£300
26 January [1562]	to the same William Blunt to be paid over to the said Eloy Mestrell, the Frenchman, towards the charges in finding himself during the time of his service then past,	£25
Total		£397

Note, incidentally, the clear distinction made here between presses and rollers. In the account of John Bull, comptroller of the Tower, there is a reference to £14 16s. 6d. paid in respect of a rolling mill with steel rollers. Although the account actually describes this mill as a 'press' we can be sure that it was a rolling mill, for two reasons. First, the quantity of steel used in the two rollers, 227 lb. is far in excess of anything which would have been required for a coining press had that press employed rollers, and second, the final item in the payment, of 13s. 4d. to two labourers 'for turning the wheel that the rollers are justified withall', makes sense if we are contemplating a rolling mill which needs adjusting to accommodate material which is of different thickness due to defective casting, but does not make sense if we are thinking of a coining press which is set at a certain tolerance and stamps the blanks without the need for continual adjustment.⁹ Finally, there is the evidence of the report made of a trial held in 1572 of the speed at which Mestrell made his blanks compared with the traditional method employed by the shearmen and hammermen. Since there has been some recent confusion about what went on in 1572¹⁰ let me repeat that the competition was about

⁸ PRO. E351/2185 m.5.

⁹ PRO. E101/303/24. The details of this account were accurately given by Henry Symonds in his article, 'The mint of Queen Elizabeth and those who worked there', *NC* 4th ser. 16 (1916), 70.

¹⁰ Ruding, in his *Annals of the Coinage*, 3rd edn (1840), I, 345, inadvertently misled his readers by recording under the year 1572 that on 25 August the warden of the Mint had reported that 'the machine for coining, invented by Eloy Mestrell, had, upon repeated trials, been found defective'. Ruding's view was re-iterated by Hocking in his 'Simon's dies', p. 74, and more recently still, in his book *The Art and Craft of Coin Making: A History of Minting Technology* (1988), p. 46. Mr Cooper has given further currency to such

an interpretation by saying that in 1572 the warden of the Mint condemned Mestrell's screw presses because of their slow operation, and opining that this slowness may have been attributable to Mestrell's striking some coins with patterned edges. This misunderstanding of what the 1572 trial entailed is not re-iterated by Mr Cooper in the article already referred to but he does continue to cloud the issue by suggesting that 'the account of the trials carried out on the 19th May are virtually impossible to interpret due to the confusion between blank cutting and rolling'. In reality, the document is very informative and useful. BL, Lansdowne MS 48 no. 15, partially printed by Symonds in 'The mint of Queen Elizabeth', pp. 75-6.

blank making, not about striking coin, and that this is precisely what one might have expected.¹¹ From the Mint's point of view the manufacture of coin had to satisfy two, and only two, criteria: coin must be of proper fineness and of accurate weight. This is not to say that no-one cared what a coin looked like or that positive attempts were not made to ensure the manufacture of coins of reasonable appearance; rather, it is to emphasise that, although aesthetics in coin production was a desirable end – handsome coin was to be produced if at all possible – it was not a legal requirement in the early modern period, any more than it is today; whereas correct metal composition and weight were mandatory and enforced under penalties.

What this meant in practice was not that the Mint would automatically set its face against innovation, rather that it would not willingly embrace innovation if by so doing time-honoured practices which produced acceptable coin from a legal point of view, at an acceptable cost, were to be replaced by processes which were less reliable, far more time consuming, and therefore more costly. The manufacturing skills against which Mestrell had to compete were essentially four: first, casting ingots of uniform dimensions; secondly, slicing identical pieces from these ingots; thirdly, flattening and shaping these pieces to the correct diameter of the coin; and, fourthly, annealing sufficiently often and well to ensure ingots which would slice, flans which would spread, and finished blanks which would bear the coining dies without splitting. It was to establish whether Mestrell's machinery could indeed match these skills that the 1572 trial was held.

The apparatus which Mestrell employed under the scrutiny of William Williams, the assay-master, and other Mint officials accords very well with that listed in the 1561 estimate. Ingots were cast in Mestrell's own moulds and then reduced to blanks by being put through his first cutter. These were then passed through the justifying rollers between three and five times and then cut to finished coin size by being put through his second cutter. Here we have clear evidence that Mestrell did not punch his blanks out of continuous rolled strip but out of an existing blank which had been flattened in the rolling mill. To my mind the first cutter was of the smaller variety mentioned in the 1561 estimate. This punched out of the ingot a blank which was smaller in diameter and heavier in weight than the final coin was intended to be. In being reduced to the correct thickness by the justifying rollers this blank then became wider than the finished coin size, thus enabling the second cutter to punch out a good clean blank of the correct size. In Mestrell's process, then, there were two kinds of scissel: the remnants of the ingots from which the first blanks were cut, and the remnants of the first blanks from which the finished ones were cut.

So far our documentary evidence has shown us that Mestrell cast his own ingots, in his own moulds; he neither hand hammered these, as has recently been suggested, nor passed them through his rollers to produce strip, rather he used two cutters of different sizes to produce blanks, which were rolled in a rolling mill. He then struck these blanks not by hammer but in a press. The question remains, what kind of press? As silver sixpences in the Royal Mint Collection show, it was certainly one in which the dies could occasionally clash, and one in which the dies could certainly crack.¹² And, as three gold half-pounds in the British Museum show, it was one which could also be allied with different edge finishing techniques: one which is typical of coins struck without a collar, one which is very smooth and flat, and one which is knurled.¹³ Finally, it was a press which was capable of striking coins which had the same characteristic as many hammered coins in that a turned up lip could be left on the edge of the coin, beyond the final part of the design.

¹¹ The rest of this paragraph and the next are taken from C.E. Challis, 'Lord Hastings to the great silver recoinage, 1464–1699' in *A New History of the Royal Mint*, edited by

C.E. Challis (in the press).

¹² Royal Mint Museum.

¹³ British Museum, Department of Coins and Medals.

Theoretically, Mestrell may have used one of three types of press – first, a cylinder- or roller-press in which metal strip is passed between two cylindrical rollers one of which carries several obverse designs of the coin to be made and the other an equal number of reverse designs; second, a rocker-press in which dies mounted in two curved surfaces are rolled together imparting their impressions on the blank as it passes from one side of the press to the other; and, third, a screw-press in which the dies are held vertically as in the traditional hammer process and hit from above, as in the hammer process, the difference between the two processes being that the blow in the screw-press is imparted by a threaded ram which is made to descend rapidly down by being turned with a bar attached to its top.

The first of these possibilities we can dismiss simply because a cylinder-press which stamps continuously as it is rotated must be fed with strip metal and this, as we have seen, Mestrell did not produce. This leaves the rocker- and the screw-press and in deciding between these two we should return to the estimate of 1561 and remind ourselves of the description of the press it contained:

a press, i.e. the frame holding the moving parts
 a worm, cast from 50 lb of copper
 a bar of iron to the press
 a box of steel for the vice
 [a pair of tongs with stamps fitted to them]

Now we must readily concede that ‘a press’, i.e. the frame holding the moving parts, could apply equally well to both a rocker-press and a screw-press; and much the same can be said of the tongs fitted with the dies. It could also be argued that the bar of iron was the lever by which the mechanism of the rocker-press was moved from side to side. At this point, however, the possibility that the press of the 1561 estimate was a rocker-press ceases. Although we do not know precisely what the vice and the box of steel to the vice were, we can feel fairly confident that there was no place for them on the rocker-press and we can be absolutely certain that the large worm, or threaded screw, can have had nothing to do with a rocker-press. A rocker-press did have threaded screws but there were two of them and, because they were used only to adjust the tolerance between the dies, they were relatively small. The screw of the 1561 estimate is in the singular and is very heavy; it would answer precisely as the ram of a screw-press and this being so we may imagine the bar of iron being threaded through its end for use in activating the screw. A 50 lb screw driven by a bar of almost equal weight could deliver a powerful blow.¹⁴ This identification of Mestrell’s press as a screw-press is clinched by the fact that there is in the 1561 description of a press’s components no mention of the cogs which are on the ends of the axles bearing the dies in a rocker-press, and which lock together to give synchronised movement.

This story I have told from contemporary manuscripts is, to my mind, conclusive: Mestrell did use a screw-press. Such a conclusion does not, of course, resolve the problem raised by Professor Gaspar’s initial logic: namely, why did not the use of a screw-press, without a collar, produce fish-tails in the lettering on Mestrell’s coins just as a similar combination of coining techniques did in the letters on eighteenth-century coins? But why should we even accept this logic? To begin with, we know that hammered coins were made without collars, from dies which were struck from above just as dies were in a screw-press yet fish-tailing of the eighteenth-century kind is not a distinctive feature of hammered coins. Secondly, while it is perfectly true to say that fish-tailing is not a normal feature of Mestrell’s

¹⁴ According to J. E. T. Rogers, *A History of Agriculture and Prices in England*, 7 vols (Oxford, 1866–1900), IV, 408, the mean price of wrought iron in 1560, 1561 and 1562 was

approximately 24s. per hundredweight of 112 lb. At this rate the estimated cost of 10s. for the iron bar in the 1561 machinery estimate would have represented 47 lb.

coins it is not true to say that it never occurred, as may be seen from a shilling from the national collection in Wales, to which Mr Besly very kindly drew my attention.

The residual question which emerges at the end of the discussion is not, therefore, what kind of press did Mestrell use or, yet again, why did his coins not display fish-tails. Rather it is why did his screw press produce fish-tails on some occasions but not on others? Since the solution must be related to the type of blank with which the press was fed, as well as to the relief of the die and the speed and force with which the press was operated I intend over the coming period to consider two kinds of experiments. The first, which is already well begun by my colleagues in the department of metallurgy in the University of Leeds, is a comparison by electron microscopy of Mestrell's coins with those struck both by the hammer and by the presses of Blondeau. Here the coins will be sawn up and polished so that we can look at the inclusions in the silver both in plan and in section to determine how the blanks were flattened and how their edges were made. The second, which I hope to organise through the good offices of the Royal Mint, will seek to strike blanks of the same size and alloy as Mestrell's coins, without the use of a collar, at different pressures and/or speeds to determine if we can say precisely at what point distortion of the lettering or other parts of the design, such as the beading, will take place. I shall look forward to presenting my findings to you in the not too distant future.

In the meantime I leave you with Mestrell still in possession of his screw-press, still the true father of mechanised coining in this country.

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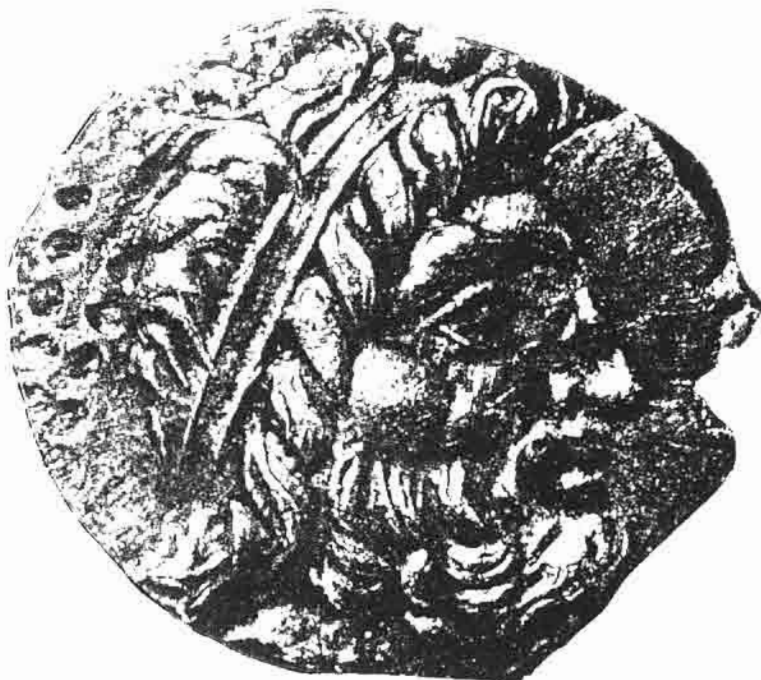
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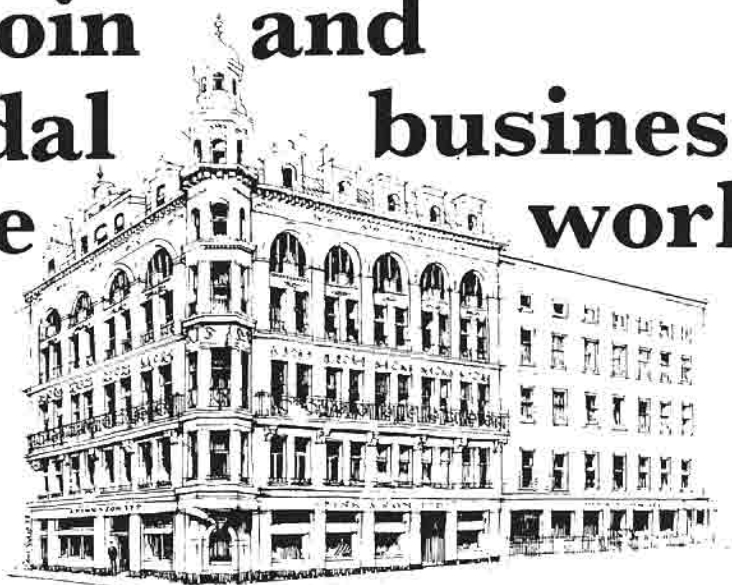
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